SEPTEMBER 1957



Jobber Executive Edition_follows page 32

This ring does more for you than any other



introduced
in the
last
decade!

Sealed Power's New Stainless Steel Oil Ring

No other oil ring holds full tension at engine operating temperatures, hardens in use. This oil ring will not sludge, will not corrode. All these features are Sealed Power exclusives because only Sealed Power uses austenitic stainless steel!

The Stainless Steel Oil Ring is featured in KromeX sets for engines which require super oil ring performance.

SEALED POWER CORPORATION . MUSKEGON, MICHIGAN

Sealed Power Piston Rings

TWO FEATURES MOST WANTED BY MECHANICS



Proper axial pressure of the side rails against sides of grooves assures side-sealing—even under high vacuum conditions of deceleration.

Circumferential abutment type design makes the ring independent of the contour and depth of piston groove. It exerts its pressure uniformly ... conforms more readily to the bore. Chrome-plated steel side rails for more than double normal life. They seat instantly.



THERE'S A PERMATEX PRODUCT FOR EVERY MAINTENANCE NEED



SEALING COMPOUNDS

Form-A-Gasket No. 1 Form-A-Gasket No. 2 Form-A-Gasket No. 3 Super '300" Form-A-Gasket Pipe Joint Compound No. 51







SEALANT-CEMENTS

Stick-N-Seal **Gasket Cement** Glass Sealer Indian Head Gasket Shellac Compound









SHOP REPAIR ITEMS

Valve Grinding Compound Prussian Blue





OILS & LUBRICANTS

Penetrating Oil Solvo Rust Toon-Ovl Anti-Seize Compound Indian Head Clear Rubber Lubricant











POLISHES & CLEANERS

Blue-Blazes Silicone Cleaner-Polish Perma-Lustre Cleaner-Polish Acrylic Cleaner & Polish Taroff Car Wash **Fabric Cleaner** Windshield Cleaner Concentrate **Chromium Polish**



COOLING SYSTEM PRODUCTS

Block & Head Sealer Cooling System Cleaner & Conditioner Water Pump Lubricant & Radiator Anti-Rust Heavy-Duty Radiator Cleaner Radiator Sealer (liquid) **Double Action Radiator Cement Indian Head Radiator Cement**



HYDRAULIC FLUIDS

Knee Action-Jack-Shock Absorber Oil Hydraulic Jack Oil Heavy Duty Brake Fluid Moderate Duty Brake Fluid Automatic Transmission Fluid (Type A) **Hudson Clutch Fluid** Indian Head Hydraulic Brake Fluid







PERMATEX COMPANY, INC. General Offices: 300 Broadway, Huntington Station, N.Y. Factories: Brooklyn 35, N.Y., Kansas City 15, Kans.



REGULATORS . SWITCHES . COILS . CONDENSERS . WIRE AND CABLE . CONTACT POINTS

CHILTON'S

MOTOR AGE

WITH WHICH IS COMBINED AUTOMOBILE TRADE JOURNAL

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SEPTEMBER 1957

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PROBLEM: On late-model Chevrolets, camber is set by the use of shims behind the two mounting bolts on the upper control arm inner shaft.

To increase negative camber, you add shims.

To increase positive camber, you remove shims.

As the front-end assembly "wears in," a greater positive camber is required. But this condition cannot be corrected by removing shims if camber is excessively negative.

solves positive camber problem

SOLUTION: Moog engineers have designed an upper-inner shaft with the ends machined off-center. This permits an additional positive camber adjustment up to 3/3 degree-enough to compensate for camber difficulties in '55, '56 and '57 Chevrolets!

TRY THE NEW PLUS 2/3° Ask your Moog Jobber for K-119. Kit includes a pair of bushings, compression plates, cap screws and lock washers-in addition to exclusive Plus 2/3° shaft.

MOOG INDUSTRIES, INC. ST. LOUIS 14, MO.



means more "under-the-car" business!

"...helped point the way to increased sales" says GEO. P. MALONEY, Plymouth dealer, Canton, Ohio

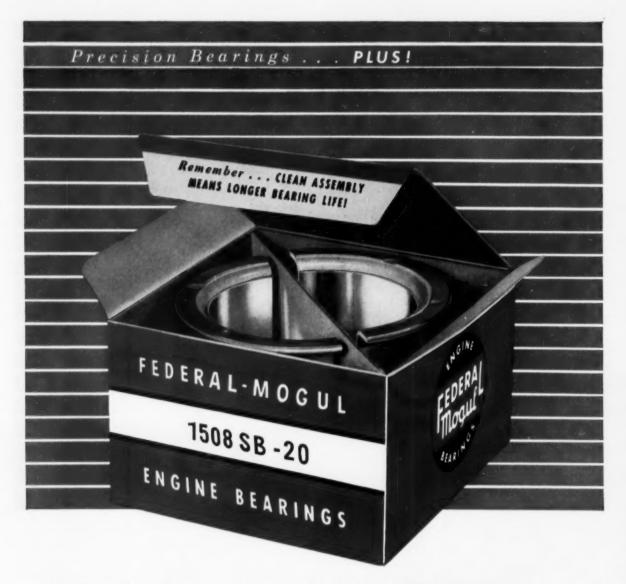
"Commercial Credit's grasp of our sales problems helped point the way to increased sales this year and last. The Commercial Credit Plan gives us deeper penetration of our market and their skill in handling collections keeps customers happy and holds repossessions to a minimum. Our service department has benefited by the way the insurance adjusters work with us. Many of our customers have praised the emergency service they were able to get from Commercial Credit's nationwide network of offices."

Commercial Credit dealers are <u>successful</u> dealers

Write or call our nearest office for complete information on the benefits of COMMERCIAL CREDIT PLAN. Why not do it today?



A service offered through subsidiaries of the Commercial Credit Company, Baltimore . . . Capital and Surplus over \$200,000,000 . . . offices in principal cities of the United States and Canada.



There's more than Quality Bearings in this box . . .

You get a lot more than a fine bearing when you open a Federal-Mogul package. You get the assurance that the bearing is engineered for service. You can get technical help in tools, manuals and service information. Your jobber makes these available to you—

and he is backed by Federal-Mogul Service, an organization specializing in your kind of work. And there's one more plus: You know you're joining the other fine mechanics who have made Federal-Mogul engine bearings number one in preference!

FEDERAL-MOGUL SERVICE

DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.





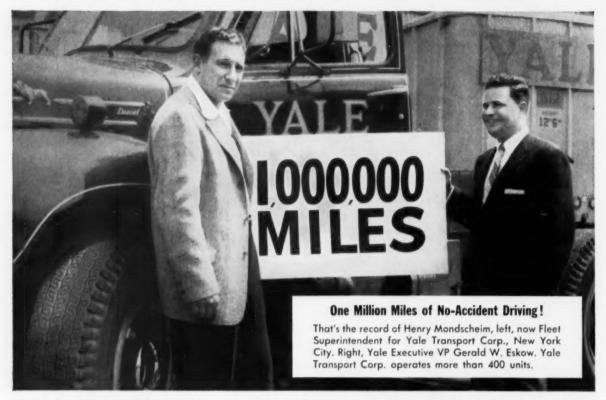
RESEARCH . DESIGN . METALLURGY . PRECISION MANUFACTURING . SERVICE



The terms "Scotch" and "3M" and the plaid design are registered trademarks of Minnesota Mining and Manufacturing Co., St. Paul 6, Minn. Export Sales Office: 99 Park Ave., New York 16, N.Y. In Canada: P.O. Box 757, London Ontario.



"We Never Knew Tires Could Make Such A Difference In How Our Men Drive — Till We Put On ARMSTRONG S-D's"



Yale Transport Diesel rigs now hold normal speed through what used to be 20 mile an hour areas—with safety and mileage both improved.

Can Armstrong Miracle S-D Tires cut route time? Yale Transport will tell you, yes! Will these tires win drivers' enthusiasm, step up safety, pile up extreme mileage? Ask Henry Mondscheim:

"These Armstrongs are the first tires all our drivers agree are far safer. Now they barrel through tricky stretches, knowing they can stop if they have to. They get more traction in rain and snow. Mileage is fine. Our high-torque Diesels burn up some tires, but these Armstrongs have plenty of tread left at the 75,000 mile mark. Our men and our records say, we've never had any tires perform like these."

Armstrong's S-D tread (see diagram) is the first to win a U.S. mechanical patent in 18 years! It makes these tires "kiss the road" to give tremendous mileage — yet grip the road for real "stop and go". Run a test — learn, as Yale Transport did, how different a tire can be!

Exclusive interlocking sipes. Grip in all directions, yet "kiss" the road and leave it without fore-and-aft scuffing that is

the road and leave it without fore-and-aft scuffing that is the main cause of wear.

Exclusive introtreed bumpers. Keep tread open, yet prevent weaving under load or braking. Greatly reduce side-toside scuffing.

ARMSTRONG MIRACLE STRUCK TIRES

The Armstrong Rubber Co., Home Office, West Haven, Conn.



Mewest type SIOUX ABRASIVES

ARE NOW ROLLING FROM THE NEW



ALBERTSON & COMPANY, INC. Abrasive Division

TO ALL PARTS OF THE WORLD

Albertson & Co., Inc. have opened their new Abrasive Plant in LeMars, Iowa. LeMars is 25 miles north of the main plant in Sioux City, and connected by a new four lane highway.

Year around air conditioning, with its steady temperature and humidity assures the finest quality control.

This modern plant employs exclusive production methods on equipment much of which is designed and built in the Sioux City plant.

Its purpose is to meet the expanded demand for Sioux Abrasive Discs, and to serve you better in every way.



Albertson & Co., Inc., representatives from Mexico and Switzerland inspected the company's new LeMars plant during a recent sales meeting.

Oscar Albertson, left, explains how the discs are shaken to remove loose grit at this point in the production line to Juan Forseck and Son—Forseck's are Albertson representatives in Mexico City, Jean Fleury, the man with the camera represents the company at Bern, Switzerland. Behind him in the center is H. A. Jacobsen. At right is Darrel Ketelsen representing the LeMars Development Corp.

ALBERTSON & COMPANY, INC., SIOUX CITY, IOWA, U.S.A.



From the LeMars Plant

ABRASIVE DISCS

FOLISH

AND WAX

From the Sioux City Plant

VALVE REFACERS • ELECTRIC SAWS • DRILLS SANDERS • SCREW DRIVERS • IMPACT WRENCHES GRINDERS • FLEXIBLE SHAFTS • POLISHERS

Good Start for a Better Finish....

USE SIOUX ALL THE WAY THROUGH



Get ready for big winter business now! New improved MoPar Anti-Freeze comes with rust inhibitors, lubricants, and other ingredients permanently blended to give your customers complete winter protection. Both All-Weather Permanent type and Methanol type exceed normal anti-freeze

specifications. An official, authentic Chrysler Corporation product, made to highest quality standards to protect your customers and your reputation. Order MoPar Anti-Freeze from your MoPar wholesaler salesman or your Plymouth, Dodge, De Soto, Chrysler or Imperial dealer.

MOPAR "DATED" DRY-CHARGE BATTERIES: THEIR LIFE BEGINS THE DAY YOU SELL

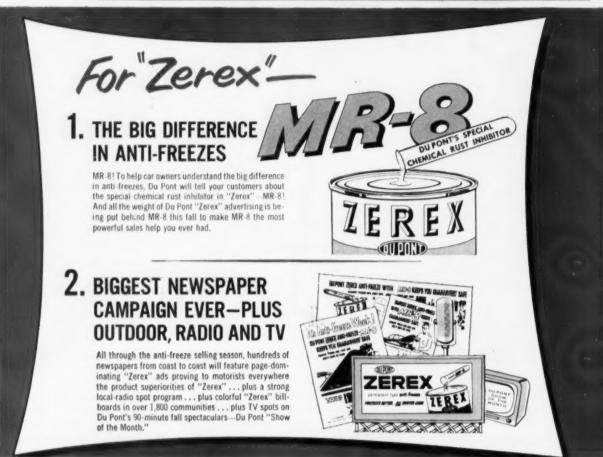


Offer your customers factory-fresh MaPar Dry-Charge Batteries...warranted battery life begins the day they buy! MoPar assures maximum power, long life, compact dependability. For details on how to get a new MoPar battery stand, see your MoPar wholesaler.



MOPAR DIVISION > CHRYSLER MOTORS CORPORATION
DETROIT 31, MICHIGAN

ZEREX-ZERONE FALL ADVERTIS FUL SALES BOOST



THE EXTRA PROTECTION OF "ZEREX" WITH MARKET IS BACKED BY GUARANTEE



WORKS IN ALL WATERS cause the MR-8 in "Zerex" won't separate out, as some inhibitors do, its effectiveness remains intact (see test tube on right).



"Zerex" contains no oil so it won't soften or rot radiator hose and cut down cooling-system circulation (see hose on right).



SYSTEM METALS (iron, copper solder aluminum, zinc, brass, steel) from corrosion and neu tralizes all cooling-system acids.





'Zerex'' does not cause rust to stick to cooling-system surfaces because it contains no oil. Prevents radiator clogging.

DU PONT GUARANTEE

HALL

"Zerez"® anti-freeze will protect the cooling system of your car from freezing, rust or
corrosion for one-full winter- and will not leak
out—it used in a property operating water
table cooling system and if used according to
De Pont directions printed on the "Zerez" container.

De Pont guarantees too, that "Zerez" will
out the protection of the protection of the procet boil sever and can be used with subther hale.

not beil away and can be used with either high or low opening thermostats, at high or low alti-tudes in extreme driving or weather condi-tions. "Zerex" will not harm rubber hoses, gaskets pump packing, metal parts of the cool-ing system or car finish. "Zorea" mixes per-tectly with water, flows freely and transfers heat efficiently.

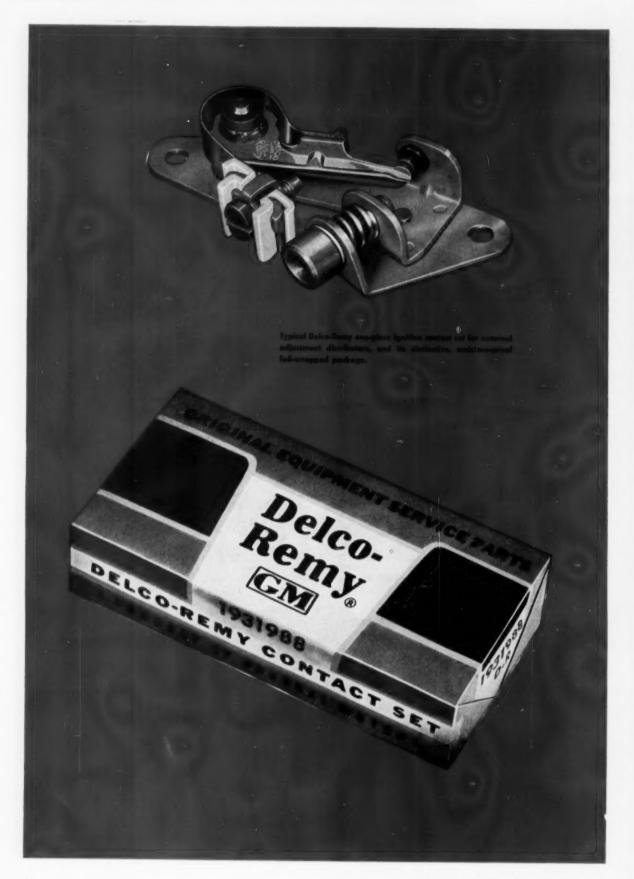
WATCH THE DU PONT "SHOW OF THE MONTH" ON THE CBS TELEVISION NETWORK

WILL FEATURE THE 4 MOST IN THE ANTI-FREEZE FIELD



BETTER THINGS FOR BETTER LIVING

. . . THROUGH CHEMISTRY



DELCO-REMY LEADS THE FIELD WITH NEW ONE-PIECE, PREADJUSTED IGNITION CONTACT SET FOR THE REVOLUTIONARY EXTERNAL ADJUSTMENT DISTRIBUTOR

Never before such convenience, accuracy, quality, and sales appeal in ignition contact sets. This new, completely assembled, factory-adjusted unit specially developed for Delco-Remy external adjustment distributors offers these important advantages:

- 1 One-piece construction for easier, quicker installation.
- Fully adjusted, including spring tension and contact alignment.
- Convenient primary terminal for easy attachment and detachment of leads.
- Revolutionary new adjusting screw permits easy, accurate adjustment of cam angle while the engine is running.
- New moisture-proof, heat-sealed foil package protects contacts from dirt and oxidation—is easy to stock, identify, and sell.

Each set is enclosed in the new Delco-Remy moisture-proof metal foil package. These colorful, distinctive packages stack neatly in your parts cabinet, are easily identified, and assure your customer factory-fresh, original equipment merchandise.

DELCO-REMY . DIVISION OF GENERAL MOTORS . ANDERSON, INDIANA

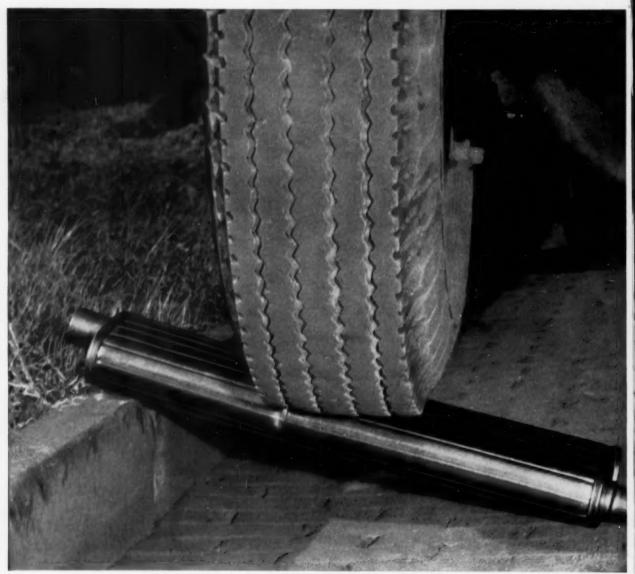


GENERAL MOTORS LEADS THE

AY-STARTING WITH

Delco-Remy

HEAVIER STEELS, PLUS FIGHT RUST, MAKE AP



More than you'd expect from a muffler. But just to show you how strong AP mufflers are, we ran this tractor weighing 5 tons over a standard AP oval with practically no damage to the shell. The reason is heavier steels, sturdier construction.



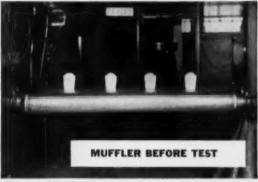
NEW "DRI-FLOW" DESIGN, MUFFLERS LAST LONGER



For years AP mufflers have been known for their ability to last longer because of up to ½ heavier heads, ½ thicker "Air Liner" shells on all ovals. Furthermore, many numbers have asbestos liners or corrosion-resistant aluminized and zinc-coated steels.

Now the new "Dri-Flow" Design adds more to this long life by cutting down condensation—the prime cause of muffler failure. This design, which is on more than 50 popular numbers and is being added to others as fast as production permits, insures controlled, even heat distribution over the entire area of the muffler. There are no cold spots to cause premature rust-out—no hot spots to speed burnout. AP mufflers are now longer lasting on the inside—as they have always been on the outside—yet at no extra cost.

Better, too, is the AP plan to help you make big profits from muffler installations. The "Tap, Look and Listen" program, thoroughly tested in the field, right now is bringing in \$2500 and more per year to dealers like you all over the country. This plan, complete with all the sales aids you need, is further backed by national advertising that tells your customers why AP mufflers are their best buy. Isn't it time you got into the muffler business on a sound, profit-making basis . . . with AP?



The new AP "Dri-Flow" model and one of earlier design were installed on an engine dynamometer. Candles were placed on both mufflers and the engine was run at a speed of 25 mph for 10 minutes. Melting candles show heat distribution.



New AP "Drl-Flow" Design has uniform heat in every chamber so as to eliminate cold spots where excessive corrosive moisture collects. The latest example of AP quality leadership, this design insures a much drier muffler. And with AP's heavier steels, it means an even longer-lasting muffler.



Old hot-spot, cold-spot design of most mufflers, including this earlier AP model, is shown by unevenly melted candles and heat-darkened areas. Corrosive moisture from exhaust fumes condenses in cold spots, hot spots burn out metal. This combination shortens muffler life.

THE PARTS CORPORATION

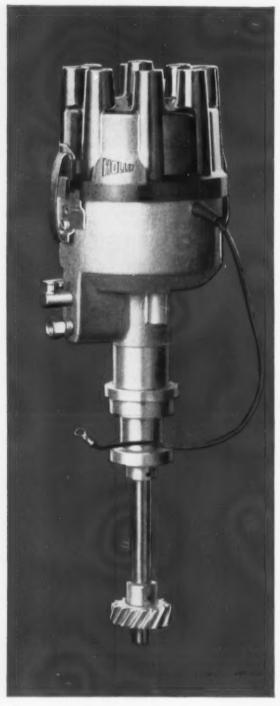
3-V AP Building, Toledo 1, Ohio Mufflers and Pipes • Miracle Power • dgf 123

HIGH-COMPRESSION ENGINES

NEW!

Advanced Ignition for your Customers





THE HOLLEY ROTOVANCE DISTRIBUTOR

Now, for your customers who want the performance of a "custom" ignition system here is the new Holley Rotovance Replacement Distributor. It delivers maximum performance from idle to high speed because it is a completely newly engineered distributor. There is a big market with applications from 1955 on for Ford, Mercury and Lincoln—and it is priced for profit! Each Rotovance Distributor is sent complete with all parts necessary for installation and with a detailed instruction sheet cutting replacement time to minutes.

See your authorized Holley distributor-jobber. He has Rotovance Distributors in stock now!

PART	APPLICATION		
D-1319AA	1957 Ford 8 Cyl.		
D-1474AA	1957 Mercury		
D-1475AA	1957 Lincoln		
D-1527AA	1955 & 56 Ford 8 Cyl.		
D-1528AA	1955 Mercury		
D-1529AA	1955 Lincoln		
D-1531AA	1956 Mercury		
D-1532AA	1956 Lincoln		

NEW HOLLEY ROTOVANCE DISTRIBUTOR

- Both centrifugal force and vacuum assure positive spark advance.
- Dual points.
- Stationary breaker plate prevents wobble at high speeds.
- Perfect register for all spark advance.



FOR MORE THAN HALF-A-CENTURY—ORIGINAL EQUIP-MENT MANUFACTURERS FOR THE AUTOMOTIVE INDUSTRY

RT-25

11955 E. Nine Mile Road, Van Dyke, Michigan

45,000 shops profit daily

with National's Big Red Cabinets

GREASE FRONT WHEELS

ALWAYS USE
NEW OIL SEALS

Here's why

Extra profits on major repairs,
brake and wheel work

No lost time sending out for seals

Controlled storage for seals and bearings

All fast-moving numbers; no deadwood

All-steel cabinet free with stock

World's best interchange data

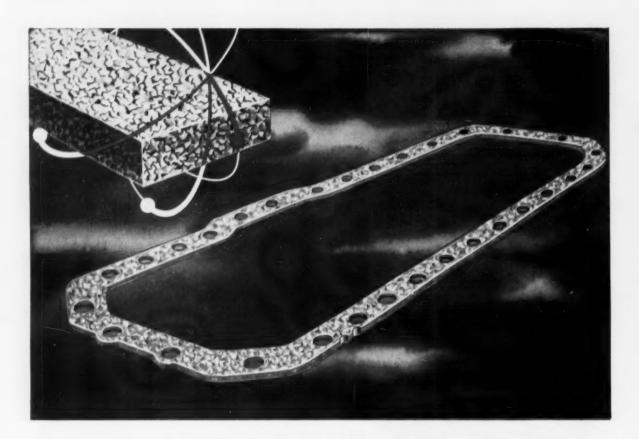
Join the 45,000 profit-minded shops now stocking National Seals. Your jobber will install and maintain your stock. Call him today!



FEDERAL-MOGUL SERVICE

Division of Federal-Mogul-Bower Bearings, Inc. Detroit 13, Michigan





Electronic Baked Cork—the secret of better sealing with Armstrong-Victor Gaskets

Maximum uniformity of density...of tensile strength...of compression and recovery range... assured by this exclusive A-V process

Electronic baking cures cork composition in minutes while the old steam method takes hours. It cures thoroughly and evenly from inside out. It prevents over-curing on the outside of mats before the inside is done as frequently happens with steam baking.

Yes, electronic baking means better, more uniform quality cork gaskets—yet with no increase in price.

Density More Uniform—Curing cork this modern A-V way produces 6 times more uniform density in composition structure.

Greater Uniform Strength—Uniform density in cork assures uniform tensile strength. Electronic baking increases this strength about 10% and adds flexibility. It gives A-V gaskets greater resistance to cracking and breaking.

Uniform Sealing Power—Steam-baked cork shows up to 20% variation in compression and recovery tests. A-V's electronic process scores almost 100% uniformity. It preserves more of cork's natural resilience. That's why A-V gaskets seal tighter, last longer.

Factory Fresh from Your Victor Whole-saler—He stocks A-V gaskets in sets and individual parts for all your needs. Ask him to show you the clean die-cutting, the truly round holes and accurate dimensions of A-V gaskets. You'll take nothing

else. Victor Mfg. & Gasket Co., P. O. Box 1333, Chicago 90, Ill. In Canada: Victor Mfg. & Gasket Co. of Canada, Ltd., St. Thomas, Ont.



Only genuine A-V Replacement Gaskets have this trademark—the 2 notches.

Armstrong-VICTOR

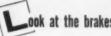
The 100% Coverage Line—for Cars, Trucks, Tractors, Stationary Engines

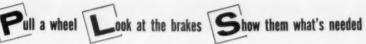
"AND WHILE YOU'RE HERE LET'S LOOK AT THE BRAKES"



Ask them to let you P-L-S







It's the One Sure Way to Get More Profitable Brake Business

Don't wait until they ask you to "fix" the brakes. Most car owners will be glad to let you pull a wheel for the protection of their life and for their safety.

If a reline is needed, don't spoil your own good work by using inferior linings-install genuine Grey-Rock Balanced Braksets, the linings with the difference you can see, show and sell!

> See the new Grey-Rock Brake Service movie, Experts say it's the best film on brake service ever made.



SEE the difference. Distinctive Grev-Rock brake linings look different-are different. You can see it in the many different types of linings Grey-Rock combines in sets engineered to give balanced brake action and longer lining life.



SHOW the difference in distinctive Grey-Rock woven and molded combinations. Where used, they provide far better brake action than molded linings alone. In other Grey-Rock sets, allmolded types give best results.



SELL the difference. When you can see and show the difference, you can sell the difference. Explain how different shoes, even in the same brake, do different work, and why different types of lining are necessary for balanced brake action and long wear.

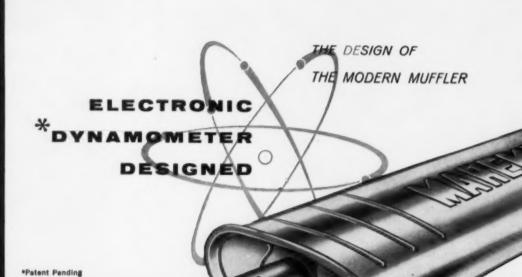
Ask your Grey-Rock jobber about the new P-L-S Plan. He has facts and figures to prove it can make more money for you.

Grey-Rock

BALANCED BRAKSET BALANCED BRAKSETS · TRUCKSETS · BRAKE BLOCKS · VEE-LOK® CLUTCH FACINGS GREY-ROCK DIVISION of Raybestos-Manhattan, Inc., MANHEIM, PA. Consistently advertised The Saturday Evening



RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Clutch Facings • Mechanical Packings • Asbestos Textiles • Industrial Rubber Sintered Metal Products • Engineered Plastics • Rubber Covered Equipment • Abrasive and Diamond Wheels • Laundry Pads and Covers • Bowling Balls **Industrial Adhesives**



maremont

FOR SAFETY

LEAKPROOF—that's Maremont! The illustrations at right show the three main features that make Maremont the safest mufflers ever. Exclusive Electronic Dynamometer Design stops deadly carbon monoxide fumes.

Electronic Dynamometer Design also gives you the quietest, longest-lasting mufflers. This revolutionary device tells what size, shape and arrangement of internal parts are necessary to remove objectionable noises created by the individual engine.

Special steels such as zinc-coated, stainless, ceramic and aluminized are used where required for shells, heads or internal parts to resist corrosive acids. Asbestos linings are protected by a full length, one-piece seamless outer shell. A heavy "ionized" baked enamel finish keeps mufflers factory-fresh.

Sealed for safety, quieter than ever, built to last—that's Maremont . . . the modern muffler for today's modern engines.



8-FT DAY-GLO VINYL DRIVEWAY BANNER FREE TO MAREMONT DEALERS

. INSPECT 30 SECONDS . INSTALL 30 MINUTES . COLLECT 30 DOLLARS

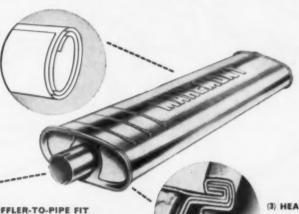
For \$30.00 extra profit per week . . . ask your Maremont jobber salesman.



Here's how Maremont makes mufflers safe at these 3 danger points

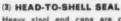
(1) SHELL CONSTRUCTION

On most Maremont mufflers, a single sheet of steel is multiple-wrapped and welded forming a one-piece seamless shell no seams to split and leak death-dealing carbon monoxide.



(2) MUFFLER-TO-PIPE FIT

Precision-fitting pipes and connec-tions complete the strong Mare-mont fume-tight seal. Maremonts are built to fit every time!



Heavy steel end caps are com-pressed and locked tight with the muffler shell. Fumes can't leak out.



IAREMONT AUTOMOTIVE PRODUCTS, INC. Chicago 8, Illinois



LIFE -the tie-in that



wraps up

more TBA sales

Tie in your selling week after week with the TBA ads that appear in LIFE. This way, you'll get a bigger share of the TBA business in your neighborhood.

Why? Because LIFE reaches the car owners in your neighborhood. An average issue is read by 30.4% of all car-owning households. And people respond enthusiastically to LIFE . . . to its exciting word-and-picture stories and its compelling ads.

The ads in LIFE pre-sell for you. You can complete the sale by featuring LIFE-advertised products regularly and by displaying the "Advertised-in-LIFE" symbol.

LIFE leads in weekly circulation

5,835,032 LIFE Saturday Evening Post 5,161,264 Look (bi-weekly) 4,669,535

your business responds to LIFE because Motoring America responds to



Sources: Audience, A Study of the Household Accumulative Audience of LIFE; circulation, ABC, first quarter, 1957.

NEW AUTO-LITE COIL AND REGULATOR ASSORTMENTS REDUCE INVENTORIES, BROADEN MARKET COVERAGE!



Now only four coils give you coverage of better than 98% of all Auto-Lite applications. They give improved performance and cost less, too!

Think of it! Only four oil-filled coils now do the work of 74! Packed in a container that unfolds into an attractive display, these coils are all hermetically sealed and moisture-proof for improved performance, longer life. See your supplier; stock up today! Assortment 90-14 includes coil 5-8, 6-volt; coil 5-9, 6-volt, Ballast Type; coil 5-10, 12-volt; coil 5-13, 12-volt, Ballast Type; 3 brackets, 32-1; resistor 32-2; resistor 32-6.





Now combined in one handy package are two 6-volt and one 12-volt Auto-Lite Voltage Regulators that give you coverage of most 6- and 12-Volt Auto-Lite equipped vehicles produced from 1940 through 1957. Application information is on the side of the 3-unit package.

This new 6- and 12-volt Auto-Lite Regulator Package (90-13) saves you valuable shelf space, simplifies inventory checking. Wider coverage with a smaller inventory investment is yours. All of which adds up to more turnover and greater profit. Stock up today!

Only 3 AUTO-LITE REGULATORS Cover 527 Vehicles

8-13 Chrysler (Industrial) 1948-51 Chrysler 1940-50 De Soto 1940-50 Dodge 1940-50 Dodge Tr. 1940-49 8-55

Chrysler 1956-57 De Soto 1956-57 Dodge 1956-57 Dodge Tr. 1956-57 Plymouth 1956-57

8-22

G-ZZ Chrysler 1946-50 De Soto 1946-50 Dodge 1946-49 Dodge Tr. 1940-49 Diamond T 1941-52 Four Wheel Drive 1950-54 Hudson 1951-53 Koiser 1947-51 Nosh 1940-48

Packard 1940-49

Plymouth 1946-49 Studebaker 1941-51 ORIGINAL

AUTO-LITE

SERVICE PARTS

®

THE ELECTRIC AUTO-LITE COMPANY . Toledo 1, Ohio . Sarnia, Ontario, Canada



\$17.10° down \$3.45 per week

KR-58 Tool Chest \$58.95* 26" x 12" x 14" high



This new Snap-on tool chest with changeable drawer combination actually lets you design your own tool chest. You can select all deep drawers, all shallow drawers or a combination of deep, shallow, and medium-depth drawers - get just the right combination for your own particular tools. And you can make future changes to fit your needs.

KR-421 Drawer Section \$31.65*

26" x 12" x 8" high



KR-352 Roll Cab \$74.50 26 1/4" x 18" x 30" high

*Slight variation in price depending on drawer selection.
All prices subject to change without notice.

Get it now on Snap-on's easy payment plan

You can get the new chest, new drawer section and the roll cab individually, as a complete unit, or in any two-way combination. Any or all are yours on Snap-on's easy payments. Ask your Snap-on man for full details.

The new Snap-on drawer section is also available with the changeable drawer feature. Two shallow drawers can be substituted for the deep drawer or a deep drawer substituted for the two shallow drawers.

The Snap-on roll cab gives you a tool chest on wheels. And you get all the built-in quality of Snap-on chests - heavy-gauge electrically welded steel, closely spaced spot welds, extra-strong internal bracing and supports. All drawers are non-sag, non-spill, easy-running units with full-width, roll-type pulls for easy opening from any angle.



8036-I 28th Avenue . Kenosha, Wisconsin



IT'S HERE! the revolutionary, European designed Open End Wrench... now MADE-IN-AMERICA by NEW BRITAIN...that makes your work easier! The powerful turning forces are applied only on the FLAT FACES, not on the corners of nuts and bolt heads! NUTMASTER exerts tremendous torque—far greater than the conventional, open end wrench—puts on the pressure where it can't burr or deform corners.

This radically new design moves, locks, or unlocks any nut or bolt, hex or square, without any jockeying for fit. The slender head works easier in close quarters—seats instantly, turns better—even on battered nuts and bolt heads.

Tool-wise mechanics will go for NUTMASTER—it's lighter and less bulky—with a positive grip that decreases slippage and skinned knuckles. And... there's longer service life—no flat, inner jaws to spread.

Available in most popular sizes, the streamlined NUTMASTER is precision forged of finest alloy steel-triple plate chrome finish. Ask your NEW BRITAIN Jobber to just let you handle it-try it out on his NUTMASTER Action Display. Brother, you'll buy it! The New Britain Machine Co., New Britain, Conn.



NEED A New Britain HAND TOOL?

... PHONE YOUR JOBBER!



Sensational New...

NUTMASTER

ITS POWERFUL TURNING FORCES GO TO WORK ...

Only on the FLAT FACES of Nuts and Bolts/



Grips hex nuts on two faces-presses on two corners.



NUTMASTER bears on 4 faces - CAN-NOT burr corners.



NUTMASTER gets a firm grip on badly worn nuts.



Grips square nuts on 2 faces - can burr corners.



NUTMASTER exerts pressure on 3 faces—no burrs.



NUTMASTER takes all shapes and styles with ease.



Your Jobber should have this NUTMASTER Display, with a HEX NUT under tension. Look for it and try this great new Wrench-in ACTION!





Trouble with 14"Tires?

...you haven't seen anything yet!

Wait until they weld to the rim at 25,000 miles. In recent proving ground tests no changer except the new Henderson could satisfactorily change 14-inch tires after 25,000 miles. Look ahead! Insist on a genuine Henderson, the first and finest tire changer, to handle tubeless tires in all sizes and at all stages of their service life. As little as \$10.30 per month. Use your old changer for down payment.



as low as \$12900

—easy Pay after Profit Purchase Plan
through nation-wide Commercial Credit
Corp.

DON'T BUY ANY TIRE CHANGER UNTIL YOU SEE IT DEMONSTRATED AT YOUR OWN SHOP, ON YOUR OWN TIRES! Buy on proof not on claims! There's a Big 4



Inside this van is your answer to any tire service problem.

BIG INDUSTRIES, INC.

Cincinnati 12, Ohio

Buy on proof, not on claims! There's a Big 4 Mobile Showroom near you to demonstrate at your door how easily you can service all sizes of tubeless and conventional tires—12-inch through 17-inch. Only the Henderson adequately handles all these sizes.

FOD AN	EARLY DATE	MANI THIS	COURON	TODAY
FUR AIR	EMBLI PAIL	, mail inis	COULCE	UDAI

BIG FOUR INDUSTRIES, INC., Dept. N 5938 Carthage Court, Cincinnati 12, Ohio

Please schedule a Demonstration Van to visit me as soon as possible.

STORE OR STATION NAME___

STREET_

CITY

STATE

SIGNED

__ TITLE __



REPORT TO OUR READERS

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SAN FRANCISCO 3, CALIF.

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THE ORDER

NOW—It Came to Pass, a great prophet once addressed a herd of donkeys.

"What would a donkey require for a three-day journey?"

And they answered, "Six bundles of hay and three bags of dates."

"That soundeth like a fair price, but I have for only one of you a three-day journey and I cannot give six bundles of hay and three bags of dates. Who will go for less?"

BEHOLD-All Stood Forth!

One would go for six bundles of hay and two bags of dates, another for three bundles and one bag. Now one especially long-eared donkey agreed to go for one bundle of hay!

WHEREUPON-The Prophet Replied-

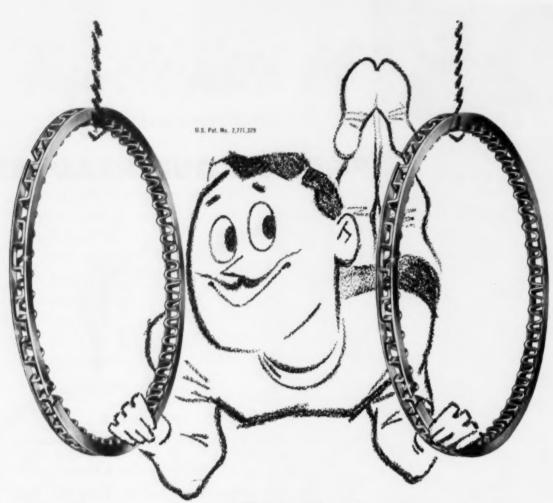
"Thou are a disgrace to the herd and an Ass. Thou cannot live for three days on one bundle of hay, much less undertake the journey and profit thereby."

"True", replied the Ass, hanging his long ears in shame, "but I wanted to get the order."

Author Unkown

Faithfully yours,

Frank Tighe



of course I use Pedrick Formflex rings

What else? Formflex Chrome Rings are "all-purpose"! They assure outstanding performance no matter what the condition of the engine. That's because Formflex rings are conformable. The exclusive "Equalizer" exerts a soft but positive and uniform pressure all around the rails, providing a more perfect seal between ring and cylinder wall. The right amount of lube oil is metered out to the cylinder walls. Maximum compression is maintained. Chrome on both the Formflex Oil Rings and the top compression rings increases life 2 to 4 times. The result is fuel and oil economy, maximum power, longest mileage. That's Pedrick Formflex Chrome!





WILKENING MANUFACTURING CO., Phila. 42, Pa. IN CANADA: Wilkening Mfg. Co. (Canada), Ltd., Toronto

executive section Jobber

Progress in Reorganization of Natl. Assns.

- A JOINT MEETING OF APPOINTED REPRESENTATIVES of national automotive trade associations was held in Chicago on August 14. It was proposed for consideration of the boards of directors of each of the respective associations, in the interest of the industry as a whole, that a new association be formed under a new name. Name would be selected by a new board or council constituted on the basis of two wholesale members to each manufacturer member. It is further provided to alternate the presidency and other offices on an annual basis between a wholesaler and then a manufacturer.
- IF THE PLAN AS PROPOSED is subsequently approved by the respective boards of MEWA and NSPA, the same plan will be presented for subsequent ratification by the Memberships of MEWA and NSPA. Each board would then appoint a committee of four each to effectuate the plan.

Anti-Freeze Campaigns Underway

- DU PONT IS SPONSORING AN ANTI-FREEZE WEEK which will start in the North on September 23-29. It will start in most of the country on October 14-20, and in the South, October 28 to November 3.
- COMMERCIAL SOLVENTS CORPORATION will sponsor the "Expert Dealer" promotion for PEAK anti-freeze dealers. Motorists will be invited to stop at the service station displaying the "Expert Dealer" sign and will be entitled to a 7-point pre-winter checkup when they buy their anti-freeze.
- INDUSTRIAL CHEMICALS DIVISION of Olin Mathieson Chemical Corporation plans for a Fall advertising and promotional campaign. Focal point of campaign will be a concentrated six-week program on "Monitor."
- NATIONAL CARBON CO., division of Union Carbide Corp., is offering comprehensive dealer sales help kits. Items in kit include special "Day Glo" window streamers and pocket calculators.

Pacific Automotive Show Changes Show Dates

THE PACIFIC AUTOMOTIVE SHOW has announced a change in Show dates for the 1959 and 1960 events. In 1959 in San Francisco the Show will be held on March 11, 12, 13 and 14, while the Show scheduled for 1960 in Denver will be held on February 11, 12, 13 and 14. Plans are under way for the staging of the 1958 Show in Los Angeles to be held on February 20, 21, 22, and 23.

FTC Dismisses Charge Against GM

- NSPA REPORTED TO ITS MEMBERS that the Federal Trade Commission sustained the Examiner's report dismissing charges that GM misrepresented Chevrolet replacement parts by misusing the term "genuine." The Commission ruled that GM has not claimed in its advertising that Chevrolet replacement parts are superior to all others or falsely disparaged the products of its competitors, as the FTC charged last December.
- FTC CHAIRMAN JOHN W. GWYNNE said that GM, "because of its desire to maintain the good will of the motoring public and because of the responsibility under its warranties is naturally interested in the use of replacement parts that are of a quality equal to those in the original car and that have been subjected to the tests of its engineers."
- HAROLD T. HALFPENNY, NSPA Legal Counsel points out that now that the use of the word "genuine" has been clarified, all independent automotive parts manufacturers should re-value their own advertising so as to take full advantage of this use of words.

U. S. ECONOMY



Get the Facts Before Buying

- BEFORE YOU BUY A GOING SERVICE or retail business, get the facts on how it fared in the past five years. Then you will need sound forecasts for the next 12 month's operations, advises the Small Business Administration.
- FORECASTS SHOULD COVER SALES estimates, profit and loss, and your working capital needs. SBA offers these pointers in its new leaf-let, Buying a Small Going Concern, at all its field offices.

Population Outrunning Estimates

- SO FAST IS THE GROWTH IN THIS COUNTRY'S population that it's outrunning official government estimates. As an outside guess, the U. S. Census Bureau foresees 208 million Americans by 1970.
- BUSINESS FIRMS PLANNING for the future had better count on there being millions more, though. Even the highest Bureau forecasts in the past have turned out too low.

OPERATION

JOBBER

Making use of advertising materials

ANY successful jobbers greatly enhance the value of local promotional programs by using materials furnished them by their suppliers. Others, unfortunately, have no definite plans. By omission, they pass up one of the most logical methods of increasing sales.

A jobber's key lines—the ones that should constantly be advertised and promoted-are a definite part of the jobber's business structure. They are his "stock in trade." The advertising campaigns which manufacturers conduct through the consumer and trade press benefits the jobber to the degree with which he identifies himself with those lines. The jobber plays the all important role of promoting locally these pre-sold products. He forges the final link in the selling chain.

If you have neglected the fine cooperative advertising plans and material supplied by most manufacturers, investigate the possibilities. "Surprise" the factory representative who calls on you. Ask him for ideas and suggestions for increasing the volume on his line.

Listen and then try out his suggestions for direct mail advertising, a newspaper campaign, a program of store display advertising.

Another way to make a start on a coordinated local advertising program is to write the Advertising Managers of several major lines and ask them for specific plans to help you improve your and their business in the area. You will find these specialists eager to help you. They will advise you about the use of tested plans and campaigns successfully conducted by other automotive jobbers.

Different kinds of products often call for various kinds of promotion pressure. Seasonal selling also enters into the picture. It must be given weighted consideration when new advertising campaigns are being developed. Most manufacturers, however, know from many years of experience the kinds and types of advertising that usually produces the most sales for jobbers at the lowest cost.

Since direct mail produces excellent results for jobbers, ask your leading suppliers to furnish you with appropriate materials.

Then set up an organized schedule to mail material to your customers and prospects at regular intervals. Material from twenty to twenty-four manufacturers will give you a readymade direct mail campaign that will run for a period of six months to a year.

Many manufacturers make a practice of furnishing newspaper mats, trade mark slugs and other material that you can use as a part of your newspaper advertising campaign. suppliers, particularly those who manufacture seasonably important products, can supply you with radio and TV spot announcements for use over your local radio and TV stations. Short duration sales drives backed up by spot announcements have been exceptionally productive during the last few years.

Manufacturer's display material when properly used in windows, on counters, walls and other high traffic areas, can produce excellent results. People still buy the products they see in larger quantities and more frequently than the products they don't see. Check directly with your supplier or their representatives and find out what kinds of display material are available. Then prepare a display schedule and stick to it.

signs of the times

Bear Appoints Factory Contact

Victor B. Day, president, Bear Manufacturing Co., has announced the appointment of Mr. Lee School (in photo) to repre-



sent Bear for all contacts with car manufacturer executives and technical and service personnel at the car factories.

School has been connected with the automotive industry for the past 18 years. Since 1954, he has operated his own manufacturer representative organization specializing in accessories, parts and equipment.

Alex Strickland

Alex Strickland, of Jewell and Strickland Auto Parts Co., Wilmington, N. C., died suddenly on July 28. Mr. Strickland was one of the charter members of the North Carolina Automotive Wholesalers Association.

This year he was serving the Association as vice president. In 1956, he had been elected to NCAWA's Board of Directors.



NSPA graduates of the 1957 Wholesaler Management Course at Ohio State University: Standing, left to right: Jean Noel Courte, Barry Messer, Allen Fine, Frank Pagano, Jr., Moses Bilsky, Robert Bower, Richard Wanger, Robert Morris, Jack Hill, Robert Russell, Kenneth Hauff, Dr. T. Beckman (faculty); Paul Bolton, National Assn. Wholesalers: Dr. James Davis (faculty). Seated: Henry Gaston, Judd Mills, Donald Hoagland, Clifford Steinbrick, Jr., William Leverenz III, Spencer Jenson.



Kenneth Mann, far right (Mann's Automotive Supply, Dickinson, N. D.), helped his community celebrate its recent diamond jubilee. Guest speaker during festivities, which included a Wild West Show and Rodeo, was B. W. "Whit" Ruark, general manager of Motor & Equipment Wholesalers Assn. (second from left). At left is Cowbelle Kay Howell. Third from left is top rodeo clown Bennie Bender.

Business Cost Report Issued

The 25th anniversary issue of NSPA's annual operating ratios and cost of doing business survey has been released to association members reports J. L. Wiggins, (in photo) executive vice



president. In spite of greatly expanded inventories of automotive wholesalers today, present stock in 1956 was at the rate of 3.5 times per year. This compares interestingly with 3.84 times rate of turnover listed 25 years ago in the initial NSPA report of 1930.

Still comparing the figures of the 1930 report with the latest one we find: Selling expenses rose from 9.83 per cent in 1930 to 12.74 per cent in 1956.

Average gross profit (on merchandise sales only) decreased from 32.66 per cent in 1930 to 29.16 per cent in 1956.

Thirty product categories which contributed ½ of 1 per cent or more of automotive wholesalers' total volume are again included in the current report of sales by lines in 1956.



Garrett to Head Dallas Jobbers

T. C. "Buddy" Garrett (photo), manager of the Automotive Parts Division of The Schoellkopf Company, Dallas, Texas, has been elected president of the Dallas Automotive Wholesalers Incorporated.

Garrett has been active in the automotive parts business in the Dallas area for over 30 years.

As a pioneer in Dallas and Southwest automotive circles, Garrett has held several previous offices in both automotive and civic organizations. Some of these include past presidencies of The Automotive Wholesalers of Texas, the Dallas Exchange Club and The Texas Automotive Show.

AAC Meeting

The Automotive Advertisers Council will hold their Fall Meeting at the St. Clair Inn, St. Clair, Mich. Date will be Sept. 23-26.

According to AAC Publicity Chairman George Freeland (Holley Carburetor), subjects vital to the sales, promotion, and advertising of automotive replacement parts will be discussed.

AP Presenting Special Plaques

Special appreciation plaques are being presented again this year by The AP Parts Corporation. Plaques go to distributors who have been associated with AP for 10 years or longer.

According to T. O. "Ted" Ulmer, vice president in charge of sales and advertising, more than 57 per cent of AP whole-



salers fit into this category. Included are about 50 distributors who have been selling AP mufflers and pipes for more than 25 years.

Presentations are made by AP territory managers in the field. Ten, 15 and 20 year plaques are of bronze and mahogany, while the 25 year plaques are of silver and mahogany.

T. M. Birmingham

Thomas M. Birmingham, age 62, Electric Auto-Lite Company sales administration manager for the Replacement Sales Division, died June 26 at his home in Toledo.

Prior to joining Auto-Lite in 1941 as district sales manager at Peoria, Illinois, Mr. Birmingham was with a major oil company for twenty years in various sales capacities.

Safety Check Results Told

ONE out of every FIVE vehicles safety-checked during the 1957 National Vehicle Safety-Check program needed maintenance attention for safe driving. An all-time high of more than 2,600,000 cars and trucks were checked. The voluntary checks were made at community Safety-Check lanes and in dealer service departments.

"For the third consecutive year, rear lights led the list of ten items checked and found most frequently in need of immediate service attention," said H. D. Tompkins, Chairman of the Inter-Industry Highway Safety Committee and Vice President of the Firestone Tire & Rubber Company. "Brakes, front lights, exhaust systems, and tires were the next items most frequently found inadequate for safe driving," he added.

Other items of the voluntary 10-point Safety-Check were: steering, windshield wipers, glass, horn, and rear-view mirror.

DeVilbiss Buys Newcomb-Detroit

The DeVilbiss Company has announced an agreement to purchase the Newcomb-Detroit Company, a pioneer in the manufacture and installation of industrial finishing equipment.

Howard P. DeVilbiss, president of the local company, said the move will strengthen both companies. He noted that Newcomb-Detroit will remain a corporate entity and be operated as a subsidiary of DeVilbiss.



Seated (left to right) at speakers' table of the recent NSPA sponsored "Schools" Luncheon in Philadelphia in connection with the 1957 AVA Convention are: JOHN P. WALSH, Director, Trade & Industrial Education Branch, Dept. of Health, Education & Welfare, Office of Education, Washington, D. C.; MERTON C. WHEELER, President, National Association of State Supervisors of Trade & Industrial Education, and Director of Industrial Education, Jefferson City, Missouri; J. L. WIGGINS, N.S.P.A. Executive Vice President; DR. WILLIAM J. MICHEELS, Professor and Chairman of Industrial Education, University of Minnesota, Minneapolis, Minn.; MEL TURNER, Mel Turner & Son, Chicago, and newly appointed Curriculum Director of NSPA's Vocational School Program; J. F. INGRAM, Past President of American Vocational Association, Inc., Department of Education, Montgomery, Ala.; STANLEY S. ROE, Secretary, AI-VE Conference Group on Public School Automotive Instruction; and MARTY BAZNER, SR., Ammco Tools, Inc., North Chicago, Illinois and a member of NSPA's Vocational Education Subcommittee.



Shown at the Grand Rapids, Mich., Brake Clinic sponsored by Kramer-Keller and World Bestos are left to right: John Landrigan, World Bestos district manager; F. B. Kramer; David Lucid, chief compounder at World Bestos, and O. C. Keller.



To help carry out a sales campaign theme earlier this year, pretty Claire Vallaire, an employee of GM's AC Spark Plug div. posed for this photo.

Industry Meetings

Sept. 23-26—Automotive Advertisers Council fall meeting, St. Clair Inn, Detroit.

Oct. 17-19—Automotive Wholesalers of Texas Convention and Booth Conference, Hilton Hotel, San Antonio.

Nov. 2-4—Automotive Wholesalers Association of Louisiana convention and booth conference, Jung Hotel, New Orleans.

Nov. 30-Dec. 1—Florida Automotive Wholesalers Association annual convention, Orlando, Fla.

Nov. 30-Dec. 6—North Carolina Automotive Wholesalers Association convention, aboard M. S. Stockholm, en route to Havana.

Dec. 5-7—Automotive Affiliated Representative 1957 meeting, Sheraton Hotel, Chicago.

Dec. 7—Automotive Booster Club International executive council meeting, Conrad Hilton Hotel, Chicago.

Dec. 8—Automotive Booster Club International annual meeting, Conrad Hilton Hotel, Chicago.

Dec. 8-13—Automotive Electric Association general membership meeting and manufacturers-distributors conference, Edgewater Beach Hotel, Chicago.

Chicago.
Feb. 3-6, 1958 — Automotive Accessories Manufacturers of America exposition, Navy Pier, Chicago.

Feb. 18-19 — Motor & Equipment Wholesalers Association convention, Statler Hotel, Los Angeles.

Feb. 18-19—National Standard Parts Association convention, Ambassador Hotel, Los Angeles.

Feb. 20-23—Pacific Automotive Show, Pan Pacific Auditorium, Los Angeles.

May 11-14—Automotive Engine Rebuilders Association convention, Sheraton-Park Hotel, Washington, D. C.



District and regional managers of the Gumout Division, Pennsylvania Refining Co., held their semi-annual sales conferences recently. Place was the firm's offices on Lisbon Rd., Cleveland, Ohio.

Automotive Wholesalers' Sales and Inventories

Data from Bureau of the Census, Department of Commerce

Region							
		Sales	Inventories				
	June 1957 from June 1956	June 1957 from May 1957	6 Mos. 1957 from 6 Mos. 1956	June 1957 from June 1956	June 1957 from May 1957		
New England	- 5	- 5	+ 9	+ 8	+ 4		
Middle Atlantic	+ 5	- 3	+ 9	+ 8	+ 5		
East North Central	- 5	- 7	+ 7	+ 4	0		
West North Central.	1	+ 5	+ 9	- 1	- 1		
South Atlantic	+ 4	- 2	+ 5	- 1	0		
East South Central	+ 2	- 4	- 9	+ 5	+ 2		
West South Central	0	0	+ 3	- 3	+ 2		
Pacific	+ 6	+ 4	+ 2	- 1	0		
United States	+ 2	- 1	+ 7	+ 2	+ 1		

Indicators of Business Activity

These figures are based on latest thirty-day reports

PRODUCTION	Latest Data	Month Before	Year Ago	Percentage Ch Month Ago	Year Ago
Motor Vehicles (Units)	591,039 144	593,387 144	534,393 136	- 0.4 None	$^{+10.6}_{+5.9}$
SALES					
New Cars	540,000	517.043	534.997	4 4.4	+ 0.9
Replacement Tires (Units)	6,246,576	5,786,717	6,626,545	$^{+}_{+}$ 4.4 $^{+}_{7.0}$	$^{+}$ 0.9 $^{-}$ 5.7
Durable Goods	\$14,180	\$14,296	\$13,587	- 0.8	+ 4.4
Non-durable Goods	\$14,168	\$14,321	\$13,767	- 1.1	2.9
Department Stores, 1947-'49 = 100	133	127	128	+ 4.7	+ 3.9
GENERAL					
Consumers' Price Index, 1947-'49 = 100	120.2	119.6	116.2	+ 0.5	+ 3.4
Civilian Employment	67,221,000	66,504,000	66,655,000	+ 1.1	+ 0.8
Unemployment	3,007,000	3,337,000	2,833,000	- 9.9	+ 6.1

Motor Age's Who's Who



D. N. Smith, vice president in charge of automotive activities, The Electric Storage Battery Company, has relin-

quished the post of general manager of the company's Automotive Division, Cleveland, and moved to corporate headquarters in Philadelphia to take on increased responsibilities. H. R. Trees succeeds Smith as division general manager in Cleveland.



J. B. Dempsey, photo, now manager of Thor's electric tool division, has transferred to The Speed-Way Manufac-

turing Division of Thor Power Tool Company and promoted to vice president to direct marketing expansion. G. R. Winkley, now assistant to the president and treasurer of SpeedWay, has been promoted to vice president. He will remain the SpeedWay treasurer. A. E. Feiereisel, now chief engineer and plant superintendent at SpeedWay, has been promoted to vice president of engineering.



Frank Ivor Goodrich has been elected vice presidentadministrative of Eaton Manufacturing Company. Goodrich

succeeds F. H. Mott, who is retiring. Prior to his election, Goodrich was staff assistant to Mr. Mott.

Bob Bester has been named to the newly-created post of sales planning and merchandising manager of the new line of Alemite-Surgepruf hydraulic hose assembly and couplings. Alemite is a division of Stewart-Warner Corporation.





Robert Fuller, left, and Robert Elder have recently joined the sales staff of Campbell Chain Company, York, Pa. Fuller will represent company in Kentucky, Southern Ohio and most of Indiana. Elder will be responsible for sales throughout western Pennsylvania counties.





John C. Dods, Jr., left, has been appointed sales manager, National Accounts Division of Purolator Products Inc. Edgar S. Main has been appointed as special assistant to the general sales manager, After Market Division.

Sam W. Archer has been named an assistant general sales manager-merchandising of United Motors Service Division of General Motors Corporation. Succeeding Archer as assistant operation director is G. Scott Foster. Charles C. Wooster has been named vice president in charge of sales of the Life Time Products Corp., Ohio.



Wooster is a native of New York City and graduated from Yale in 1940.

Seymour Stahller has been appointed assistant to the president of the Scranton Storage Battery Corporation. William Kraussman was appointed sales promotion manager.

William D.
Parsons has been appointed manager of the Detroit sales office of the Rochester Products Division of



General Motors. He replaces Harold E. Stahl, recently named sales manager of the division.

N. R. Farsje has been appointed vice president in charge of Automotive Sales of Gould-National Batteries, Inc., St. Paul. R. W. Stoll has been appointed sales manager, National Accounts.

Floyd J. Dugan has been named retail sales manager of Chrysler Corporation's MoPar Division. MoPar wholesale activities continue to be directed by S. J. Wall.

William A Sneed has been appointed general sales manager of Permatex Company, Inc. He is a graduate of



Colgate University and attended the School of Business and Finance at New York University.

Newscoop

Air Suspension Warning
Preview Of '58 Cars
Advice To Paint Shops
'57 Third Best Year?
Relocating Transmission
NADA Convention In Jan.
Pacific Coast Line

AAA Issues Warning On Cars With Air Suspension

- THE NATIONAL AUTOMOTIVE SERVICE DEPARTMENT OF AAA has issued a warning to servicemen working on cars equipped with air suspension.

 Whenever the car is on a jack or lift, do not open doors or turn ignition on since this activates leveler and may cause car to slip, AAA says. Also, always disconnect battery ground strap when towing with rear wheels on ground.
- CADILLAC SERVICE DEPARTMENT OFFICIALS, however, point out that these precautions apply only to cars equipped with a diaphragm type air suspension, such as the Cadillac Brougham, and not necessarily to all makes. The air ride unit to be offered on Cadillac's standard 1958 models, for example, differs considerably from the Brougham unit.

Here's What To Expect On '58 Cars

- HERE'S WHAT YOU CAN EXPECT ON 1958 CARS, which start popping up in showrooms next month. You'll see more makes adopting certain developments.
- THESE WILL INCLUDE: integral body frame, pioneered by American Motors; tubular X frame, first brought out by Cadillac; aluminum brake drums, adopted by Buick this year; air suspension, introduced by Cadillac; and fuel injection, ushered in by Chevrolet. In addition, there will be more dual headlamp systems offered, new transmissions, and a score of new engines with higher horsepower (top around 400), displacements and compression ratios.
- NEWLY STYLED MAKES will be longer and lower. One of the Big Three's top line will be about four inches longer than the longest 1957 model. There will be more hardtop station wagons and retractable hardtops, and wrap-over windshields extending further into the roof will be offered by more makers.

Paint Shops Please Note

- WITH MORE AND MORE AIR CONDITIONERS being installed in cars, paint shops may be interested in a suggestion offered by Lincoln. Before exposing an air-conditioned car to heat lamps or oven, disconnect the compressor clutch feed wire, the company advises.
- FAILURE TO DISCONNECT THE UNIT could result in damage to the compressor seal and/or refrigerant lines from the extreme heat. After removing the vehicle from the heat source, operate the engine for a few minutes to permit the fan to stabilize the temperature of the condenser and refrigerant lines.

Auto Industry's Third Best Year?

- WILL 1957 GO INTO THE BOOKS AS THE AUTOMOBILE INDUSTRY'S third best production year? Some industry observers believe it will, and evidence points that way. Somewhat improved sales are causing factories to take a new look at production schedules. Indication now is that a 6 million to 6.2 million car year is still possible, which would be considerably higher than somewhat pessimistic forecasts made by car company officials just a few months ago.
- THROUGH THE FIRST WEEK OF AUGUST the industry turned out more than 4 million cars compared with approximately 3.8 million in the same period last year. Hence, car makers need to build but an average of about 400,000 units a month in the August-December period to hit the 6 million mark.
- THEY SHOULD ACHIEVE THAT MARK WITHOUT too much difficulty. With the exception of July_when output declined to 496,000 units_ monthly production has been kept at a level exceeding 500,000 units, and there are no signs of softening despite new-model changeover periods. Final quarter output is expected to be stepped up considerably, so the 6 million figure is well within reach.

Nylon Tires For Cars With Air Suspension

- THE ADVENT OF AIR SUSPENSION on many cars next year, plus increasing use of air conditioners, may be an important factor contributing to the wider use of nylon tires in the next few years.
- NOW OFFERED AS AN OPTION on all volume makes, nylon casings will be pushed more by several makers next year, particularly on models carrying air suspension and air conditioners. Chief reason is that nylon cord tires, according to engineers, take the extra weight better than rayon tires.

Interest Shown In Relocating Transmission

- WHILE CAR MANUFACTURERS ARE SHOWING INTEREST in relocating the transmission to eliminate the front seat tunnel, don't look for any such major change in 1958. One company was planning a transmission affixed to the differential, ran into problems which it hopes will be licked by 1959.
- SOME ENGINEERS ARE SHOWING CONSIDERABLE interest in the European Lotus-designed unit which combines the gear-box and differential in one compact housing, permitting independent rear suspension. With the unit mounted in back, 57 per cent of the car's weight is distributed on the rear and 43 per cent on front.

NADA Convention In January

- PROBING OF CUSTOMER SERVICE PROBLEMS will feature the National Automobile Dealers Assn. convention next Jan. 11-15. NADA again will provide a service consultation hall where dealers can talk with national service directors of major auto companies.
- MORE THAN 10,000 DELEGATES probably will attend the Miami Beach convention. They will find a record-breaking display of new equipment and tools, shown in two giant tents.

Pacific Coast Line

California to Enforce Bonding of Dealers

- THE CALIFORNIA DEPARTMENT OF MOTOR VEHICLES will begin enforcement
 October 1 of a new law requiring both new and used car dealers to
 post a \$5,000 surety bond as a condition of obtaining a DMV
 license to do business. The October effective date of the law
 applies to applicants for original dealer licenses.
- DEALERS LICENSED PRIOR to the enactment of the new provisions are not affected for the remainder of 1957 but will come under the statute upon applying for renewal of their licenses for 1958. The bonding requirement was strongly supported by old line dealers in the automobile industry.

53 Vehicles Per Highway Mile in Calif.

- THE CALIFORNIA DEPARTMENT OF MOTOR VEHICLES says that the state has 53 vehicles for every mile of highways; the national average is 14 vehicles per mile. One out of every 10 automobiles in the U. S. is registered in California, the Department adds.
- AN AVERAGE OF 177,897 driver licenses are issued each month and this feature is increasing at the average rate of 15.48 per cent each month, the Department reports.

Washington Wire



Ford Backs Seat Belts For Cars

- SEAT BELTS FOR CARS AND TRUCKS get backing in testimony before the Roberts subcommittee of the House. Ford dealers have installed 200,000, and the factory has put belts in 160,000 cars, according to Ford Motor Co. officials.
- ROBERT S. McNamara, group vice president, Ford car and truck divisions, favors belts for all cars and trucks. He believes their use would cut highway deaths from 40,000 a year to fewer than 19,000.

Use Of Tranquilizers Impairs Driving Skill

- DRIVING SKILL MAY BE UNDERMINED by the use of tranquilizer pills. If you're taking these drugs, the American Automobile Assn. suggests, you'd better talk with your doctor before driving your car.
- CHECKING WITH GOVERNMENT MEDICAL experts, the AAA learns that many persons become sleepy after taking their first tranquilizers. Drowsiness at the wheel can endanger your life and the lives of others.

GMAC Wants To Add To Funds

- GENERAL MOTORS ACCEPTANCE CORP. notifies Washington that it wants to deposit more money in its general funds. GMAC asks the Securities and Exchange Commission to register \$100 million in debentures for public sale.
- THESE WOULD COME due in 1977. Money made from the sale would go into the general funds, and part of it might be used to cut down short-term borrowings.

SBA Extends Aid Into '58

- UNTIL AT LEAST THE MIDDLE OF 1958, the Small Business Administration will continue its aid to businessmen. Congress couldn't agree on a request to make SBA permanent and extended its life for one year, instead.
- SBA WAS GIVEN a revolving loan fund of \$305 million, compared to \$230 million earlier. In 1958 there may be a government drive to put more in the loan fund if private lending money remains tight.

Tax Cut Possible Next Year

- NEXT YEAR CONGRESS MAY GRANT A TAX CUT that will help small business, but businessmen will have to urge it. They can't assume the lawmakers will reduce taxes without strong prompting by the voters.
- THIS GOES FOR WHITE HOUSE and congressional plans for tax changes.

 President Eisenhower would let small-firm heirs pay estate taxes over 10 years and give small corporations the choice of being taxed as partnerships.

Efforts Made To End Exemption From Minimum Wage Rules

- OPENING RUMBLINGS WILL SOUND soon in a renewed effort to end the retail exemption from federal minimum wage rules. Groups from the House Labor Committee will try in a number of hearings to build a case against the exemption.
- TRIPS TO THE WEST COAST, Nevada, and Denver for hearings may start in October. Hearings in the Southeast also are planned, and the Midwest may be visited later.

Farmers Bought Over Million Cars In '55

- CLOSE TO 1.1 MILLION CARS were sold to farm operators and their families in 1955, the U. S. Census Bureau figures. Both new and used cars are counted in the total.
- BEST SALES REGION was the West, where farm families bought 26 autos per 100 farms. Farmers in the North bought 25 cars per 100 and those in the South 21 per 100 farms.

Small Business Gets Helping Hand

SMALLER BUSINESS IS GETTING A HELPING HAND from the White House. Ike summons smaller firms to meet with him and other government officials in Washington, Sept. 23, 24, and 25. Purpose is to bring businessmen up to date on new wrinkles in distribution methods and recent advances in technical development.



and its Mechanical Highlights

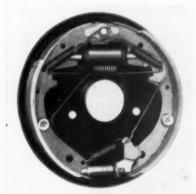
Self-adjusting brakes, Teletouch automatic transmission are some of new features



Above is the Pacer 2-door hardtop with 118 in. wheelbase and 361 cu. in. engine.

FIRST auto maker to announce its 1958 ine is the new Edsel Division of Ford Motor Co. The Edsel appears in two series on 118-in. wheelbase, Ranger and Pacer, 124-in. wheelbase, Corsair and Cita-

A close-up of self-adjusting brake



tion. Then there are five station wagons on 116-in. wheelbases.

New in styling and design, Edsel cars bristle with interesting features, some of which are a "first" in the industry. In this category is the "teletouch" electric pushbutton automatic transmission selector. Here the selector buttons—P, R, N, Dr, and Lo—are mounted in the center of the steering wheel hub.

A distinctive air ride system is being readied for introduction later in the season and will be offered as optional equipment at the factory.

(Continued on page 38)

. . . The Edsel (continued from previous page)



Shown above is Corsair four-door hardtop which has wheelbase of 124 inches; besides Pacer (seen on page 37) Edsel offers a Ranger and a Citation series.

Two new engines are introduced for this line. The 361 cu. in. engine is used in the 116- and 118-in. wheelbase cars; the 410 cu. in. engine for all models mounted on 124-in. wheelbase. Horsepower in the first case is 303; in the second, 345.

The 361 cu. in. engine has the more or less conventional type of wedge-shaped combustion chamber while the 410-cu. in. engine has what is termed a cylindrical wedge chamber. Both engines have a compression ratio of 10.5 to 1.

Edsel frames are of ladder type with boxsection side rails. The front cross member carries the front lower control arms, the number two cross member supports the front engine mounts and rear lower control arms on 116- and 118-in. wheelbase. On the 124-in. wheelbase chassis front engine mounts are supported on the side rails. The front suspension system is of coil spring type, employing the integral front spindle used in conjunction with upper and lower ball joints. The lower arm of the suspension is swept back 20-deg to produce a trailing arm effect, said to improve the ability of the front wheels to smooth out road irregularities. A link type stabilizer bar is provided at the front end on all 118- and 124-in. wheelbase cars while a linkless torsion bar is found on the station wagon chassis.

A new recirculating ball-and-nut type steering gear, and a unique power steering gear employing the recirculating ball-andnut principle appear on the Edsel.

Rear Suspension

Rear suspension is of leaf spring type with tension-type rear shackles and Silent-bloc rubber front mounts on the 116- and 118-in. wheelbase chassis, the 124-in. chassis employing compression type shackles at the rear.

Rear axles are of semi-floating, hypoid gear type with the high pinion offset introduced by Ford Motor Co. last year to aid in lowering the driveshaft tunnel.

Front brakes are 11 x 2.5 in. on the 116-

and 118-in. wheelbase chassis; 11 x 3 in. on the 124-in. wheelbase chassis. Rear brakes are 11 x 2 in. across the board. The hydraulic brake system features automatic brake adjuster. The automatic brake adjusting screw is engaged with and rotated by the stamped lever at the lower end. The lever is actuated by a cable and coil spring, adjusting action taking place on reverse braking. This arrangement is said to assure uniform braking action for the life of the lining. Power brakes are available as an extra cost item.

The oil filter is of full-flow type with a throw-away cartridge. Four-barrel carburetors and fuel pumps are of different size and type for each of the two engines. The air cleaner is of dry, disposable type on both engines.

The cooling system for the 410-cu. in. engine has a three-stage control through calibrated thermostats. The first stage permits circulation of coolant within the heads and intake manifold. The second stage allows circulation in the heads, intake manifold and block. The third stage comes into play when the thermostat located in the intake manifold opens to permit the coolant of flow through the radiator.

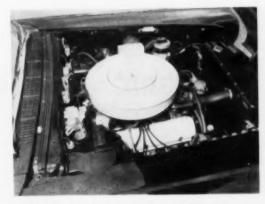
A single exhaust system is standard equipment, dual exhaust being optional, except on convertibles where it is standard equipment.

The Teletouch transmission selector, mentioned earlier, is located in the center of the steering wheel hub. When a button is pushed, it makes an electrical contact, activating its relay. The relay, in turn, causes the actuating motor to come into play, thereby engaging the transmission in the selected position. To start the engine, selector buttons must be in either P or N position. One of the safety features is that when ignition is off, the transmission can be shifted into P position but then it is impossible to change the selection until ignition is on.

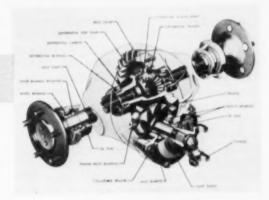
Safety Switch Built-in

A built-in safety switch prevents the transmission from engaging reverse gear when exceeding the speed required for rocking the car in snow or mud. The same switch prevents engagement of the P position above a safe low speed.

(Continued on page 76)

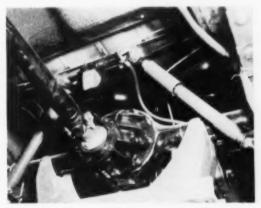


Under the hood view of the new Edsel showing new location of distributor and fuel pump



Above is exploded view of semi-floating type rear axle which is used on all Edsel series.

Below: a close look at the "sea leg" type of rear shock absorber mounting on a new Edsel.



LUBRICATING UNIVERSAL JOINTS

By JOHN K. MONTGOMERY, Technical Editor

PROBABLY one of the most neglected moving parts on today's cars is the universal joint. Since they only require lubrication about every 20,000 to 25,000 miles, little attention is paid to them by the average motorist. Too often they are neglected completely until they are worn out.

Take a closer look at the possibility of stressing universal joint care and lubrication for your customer. This article will outline the general procedure for lubricating the universal joints of popular American cars.

First step if universal joints need lubricating, is to disassemble (in the case of those joints requiring disassembly) and wash all parts thoroughly in cleaning fluid.

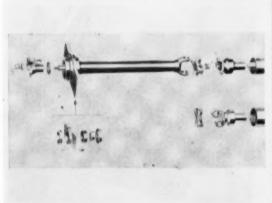
Inspect roller bearing surfaces of outer races. Check rollers for wear, scores, flat spots, and other damage. Inspect cork washers and journal dust shields for wear or injury. Replace where necessary. Cork washers should be flexible and in good condition.

Lubrication Service

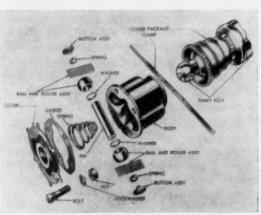
FOR BUICK: All models are lubricated internally and do not require any disassembly. The universal joint is splined to the rear end of the transmission mainshaft. It is held in position by a steel washer and bolt.

FOR CADILLAC: Drive shaft must be removed from the car to lubricate. Joints must be taken apart. To remove the shaft and joints, separate the rear joint at the differential. Slide shaft and front joint out of transmission.

Below is shown an exploded view of short shaft and universal joints used on Cadillac cars.



Below, a close-up of ball and trunnion universal joint, used on some Chrysler built cars.

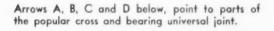


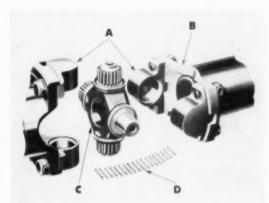
If your customer's car has over 20,000 miles be sure to check the universal joints to see if they are in need of lubrication. Too often they are neglected until worn out

Caution: Be prepared to catch oil in a pan at end of transmission. Then plug the hole where the universal came out of the transmission with a rag. Slip an old tin can over the housing as a cap.

The universal joint cross bearings are held by "C" washers at the inner edge of each bearing. Drive out the "C" washers. Then drive bearing out by driving from the side of the cross opposite the bearing's side. This will force out the bearing.

FOR CHEVROLET: The universal joints need no lubrication on models up to and including the model year of 1954. These have torque tubes and are lubricated from the transmission. On 1955 models and up with Hotchkiss drive or open driveshaft. See disassembly procedure on Cadillac. Use same procedure.

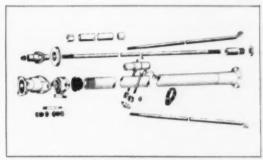




Another type of cross and bearing is shown above. This type is held together by lock rings.

FOR CHRYSLER: Universal joints on all Chrysler models from 1940 thru 1956 are the cross and yoke type. To lubricate, the driveshaft must be removed from the car. The universal joint cross is held by lock rings on the inside of the bearings. These (Continued on page 106)

Exploded view of the Nash torque tube which must be removed to lubricate this joint.



WANTED:

40,000 NEW MECHANICS



By MYRLE E. ST. AUBIN

Director, Service Section General Motors Corporation, and Chairman, Service Managers Committee, Automobile Manufacturers Association

E, in the automotive industry, are extremely conscious of the inadequate supply of mechanics, particularly, good, well-trained automobile mechanics.

Until approximately 1940, many cars were equipped with simple hand tools with which the owner could do some of his own maintenance repairs. As a matter of fact, about 16 per cent of the car owners formerly did their own tune-ups, carburetor adjustments and certain ignition work.

Today, according to a recent General Motors survey, that 16 per cent has dropped to 9. The reason is obvious. To maintain and repair our modern cars servicemen require a wide variety of specially designed tools and electronic diagnostic equipment to check out the complex power plants and related accessories. At General Motors even our most experienced dealer mechanics periodically return to our Training Centers for the latest automotive developments

Since I am talking about the necessity for trained automobile mechanics, I would like to outline what we believe will be the industry requirements in the coming years. The figures are truly staggering.

(Continued on page 92)



By MEL TURNER

Chicago Independent Garage Owner and NSPA Curriculum Director, Vocational Schools Program

REVISE OUR TRAINING METHODS

Mr. Turner points out ways the mechanic shortage can be eased.

He suggests the use of modern shop facilities in instruction courses; the stressing of the Industry's great opportunities to the prospective mechanic

THE National Standard Parts Association in 1954 created a permanent automotive vocational training committee of top level industry personnel. A brochure of pertinent information was developed and distributed by N.S.P.A. field men throughout the United States. At present, N.S.P.A. is compiling a reference library of teacher's aids which are available through the cooperation of member manufacturers.

We would like you to know that this is a long range program. It is important to all branches of the automotive parts and service business. I assure you it will be vigorously followed through. We, of this committee, believe we know what should be done and intend to do the job.

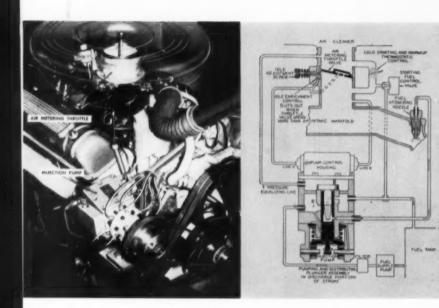
It should be understood at this point that we do not have any earth-shaking developments to announce at this time.

In the past three years N.S.P.A. has (Continued on page 78)

Both Mr. Turner's address and that of Mr. St. Aubin (see opposite page) were delivered before the State Directors of Vocational Education and State Supervisors of Trade and Industrial Education. Event was recent AMA-sponsored American Vocational Association Convention in Philadelphia.

Highlights of Marvel-Schebler's

The following article gives a detailed account of the major elements that are used in the



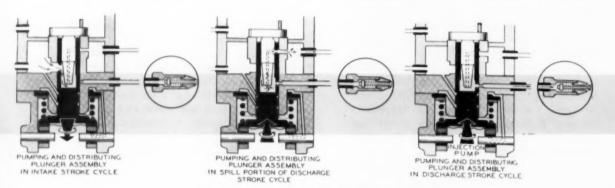
Photograph at left shows an injection system installation on 1957 car engine. Injection pump is mounted on bracket at the front end of the engine.

The schematic drawing at the right shows in detail the workings of the Marvel-Schebler injection system for installation in 1957 automobiles.

THE Marvel-Schebler injection system consists of 5 major elements, the injection pump, the air metering throttle, the spray nozzles, the fuel supply pump, and fuel filter.

The injection pump is the principal element and is the single plunger design that can be modified for 4, 6, or 8 cylinder engines. The heart of the injection pump is the pumping and distributing plunger assembly. This plunger assembly does the pumping, distributing and metering of gasoline as required by the engine.

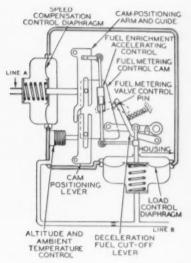
The plunger is driven at camshaft speed.



SCHEMATIC VIEW OF INJECTOR PUMPING CYCLES

fuel injection

Marvel-Schebler injection system



Above is a schematic view of pump control for matching pump delivery to air flow to engine.

The plunger reciprocation, or pumping motion, is obtained by rotation of a cam face contacting a roller. For an 8 cylinder engine the cam has 8 lobes. Distribution of the metered quantities of fuel is obtained by plunger rotation with the discharge port in the plunger connecting with a port in the plunger body as the plunger moves up on the cam lobe.

On the down stroke of the plunger, inlet ports connecting to the plunger pumping chamber connect with ports in the plunger body leading to the fuel reservoir. Plunger chamber is filled during this down stroke. The amount of fuel discharged during the following pumping stroke depends on the angular position of the fuel metering valve in relation to the plunger.

At the closed throttle, or idle fuel cut-off position, a passage in the fuel metering valve connects with ports in plunger and plunger body during the full pumping stroke. The fuel in the plunger chamber is spilled back to the fuel reservoir rather than through a discharge outlet leading to an atomizing nozzle.

Air Throttle Control

The angular position of the fuel metering valve is controlled by the air throttle. It meters the air flowing to the engine cylinders. By manifold vacuum pressure control, it establishes the proper position of the fuel metering valve so that the pumping and distributing plunger will discharge to each cylinder the amount of gasoline needed.

The air throttle is basically a tube, or tubes, with one or more throttle valves, corresponding to single or multiple barrel carburetors, to meter the air requirements of the engine for all speeds and load conditions.

The pump delivery is matched to engine air requirements by manifold pressure. The fuel valve which controls the injection pump delivery is rotated by movement of a cam, which is actuated by a bellows controlled by manifold pressure. The cam form is developed by calibration checks for the load requirements of the engine.

The cam is supported on a movable track. This track position is altered through bellows and aneroids to provide for speed, temperature, and altitude compensation. Speed compensation control is had by mass air flow measurement across the throttle valve.

Fuel enrichment for acceleration is provided for by an arresting device consisting of a sleeve and plunger which acts as a dash pot. This temporarily changes the cam track position to cause excess pump delivery over the amount normally delivered by the pump for the corresponding position of the load diaphragm. The cold starting and warmup thermostatic control provides for a fast engine idle and fuel enrichment during engine warmup. Additional fuel over the amount delivered by the injection pump for starting is introduced at the butterfly by a solenoid controlled valve. Amount varies to meet en-

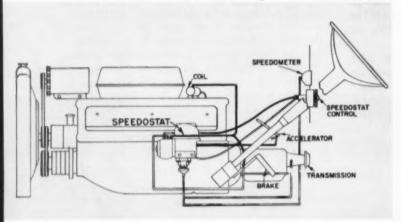
(Continued on page 105)

MECHANICAL GENIUS INVENTS NEW



Ralph Teetor, right above, explains how his Speedostat invention operates to Perfect Circle president W. B. Prosser.

Drawing below shows how Speedostat is connected to the car. Small electric motor activates linkage to accelerator pedal.



RALPH R. TEETOR who has spent most of his life in the field of automotive and mechanical invention, has designed a speed control for all types of motor vehicles. It operates on a different mechanical principle from existing control mechanisms and is currently called the Speedostat.

Mr. Teetor only recently retired as president of Perfect Circle Corp. Well known in automotive circles he has served as president of the Society of Automotive Engineers. His engineering achievements are many. Yet Mr. Teetor is blind. An accident cost him his sight at the age of five.

The result of 13 years of experimentation, the Speedostat was originally built in his home workshop. It will be produced in quantity by the corporation and will be optional equipment on several models of the 1958 cars. The truck, bus and taxi fleet field is currently being explored for Speedostat application. The device is not now available for the replacement market.

According to its designer, the general effect of the device will be to make driving safer, easier and more economical. By means of a dial on the dashboard or steering column, the driver of the vehicle can select any cruising speed he wishes. When the car has attained this pre-selected speed a warning back-pressure develops on the accelerator. In event of an emergency requiring an in-

SPEED CONTROL



Pushing button allows Speedostat to take over throttle control; spokes on dial control speed.

Located under hood, Speedostat is driven by transmission; regulated by a dashboard control.



Chilton's MOTOR AGE, SEPTEMBER, 1957

Device, currently named Speedostat, to be

offered as optional equipment on 1958 cars.

Operates on different mechanical principle.

Demonstration proves driving easier, safer.

By FRANK P. TIGHE, EDITOR

crease in speed, the back-pressure on the accelerator pedal can be easily over-ridden. When the need for extra speed has passed, the driver can relax on the added foot pressure and the car will return to the pre-set speed.

For longer cruising at sustained speeds, the device includes a feature by which the pace may be maintained automatically at any desired speed. The Speedostat will maintain the pre-selected speed up hill or down without variation. A touch of the brake pedal releases the "hold speed" feature.

Manufacturing plans call for volume production to begin on October 1, at a special plant which has been built at the company's headquarters in Hagerstown and is now being tooled up to meet the expected demand. Several automobile manufacturers have indicated they will offer the device as optional equipment on 1958 models.

As a speed reminder, the Speedostat prevents a driver from exceeding his desired speed except with conscious effort. The speed selector, a rotary wing-type lever placed within easy reach on the dashboard or steering column, can be set to posted speed limits in restricted areas or at self-imposed limits dictated by road conditions.

As an automobile accelerates to a pre-set speed, a "live" back pressure, rather than "dead" resistance, develops under the gas pedal. The driver feels the pedal being pushed back against his foot. Once the set speed is reached, the pedal becomes a comfortable footrest. If a hill tends to retard the car, back pressure recedes, allowing the accelerator to be depressed sufficiently to maintain the set speed.

An automatic feature was incorporated (Continued on page 110)



(Below) Best advice is that when you're sleepy pull over and take a nap. That's what happened to this little feller despite the no parking warning.



(Above) Does this car have nose appeal? Who could guess from this glamour shot used by Duraclean Dealers of America. The gal is demonstrating a product that blends essential oils of materials used in auto interiors to produce new car smell

Notes & Quotes

Getting Richer

Between now and 1967, America's industrial growth will break all previous gross sales records - and this record-breaking expansion will take place in an atmosphere of continued economic stability and domestic peace. Such is the over-all prediction made by a significant group of America's industrial leaders who were asked by Dun's Review and Modern Industry to take a searching look at the economic future of the nation and their companies. Nine out of

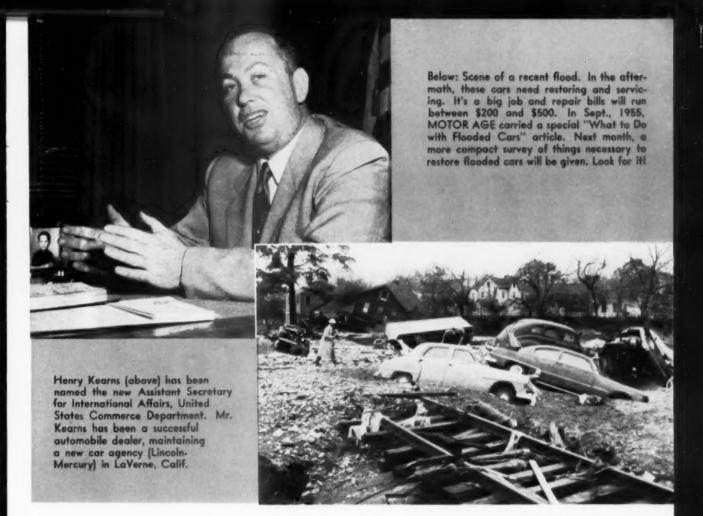
ten of these industrialists, whose collective company assets total more than \$27 billion, realistically expect their gross sales to climb anywhere from 26 to 300 per cent in the coming decade.

Friends In Action

Ten rival Galesburg, Ill., dealers have joined together in directing the operations of Henry Brown's Oldsmobile agency while he is recovering from a heart attack.

Mr. Brown's competitors staged a six-day sale of the cars in his dealership, and backed it up with a full-page advertisement in the local newspaper. Representatives from the various dealerships alternated in the handling of the sale. At the same time, in the advertisements for their own agencies, the group of dealers carried a line saying. "See Brownie First."

Mr. Gene Bragg, Galesburg Lincoln - Mercury Co., said. "We're just helping a buddy out. He'd do the same thing for us. We'll try to move as many cars for him as we can. We'd like to do a month's work for him in a week so things will be in good shape . . ." (NADA)



I Out of 5 In Need

One out of every five vehicles safety-checked during the 1957 National Vehicle Safety-Check program was found in need of maintenance attention for safe driving. An all-time high of nearly two million, six hundred thousand cars and trucks is included in the report of vehicle checks made at community Safety-Check lanes and in dealer service departments.

For the third consecutive year, rear lights led the list of ten items checked and found most frequently in need of immediate service attention.



Meet Miss Julie. Julia C. Driscoll, with Philadelphia Automobile Trade Assoc. for 10 years, has been named Association Secretary.

Gasoline From Coal

The first commercial plant to make gasoline from a raw material other than crude oil was formally opened last month. The plant, owned by the American Gilsonite Company, is located at Gilsonite, Colorado, in the Grand Valley of the Colorado River near Grand Junction.

E. F. Goodner, president of the company, said crude oil can be produced from the shiny black coal-like substance "Gilsonite"—for considerably less than \$1.87 a barrel against \$2.20 and \$4.00 for a barrel of crude oil.

FIAT'S NEW REAR-ENGINE CAR

The new Fiat model is now on the production line. This Italian car features a folding soft top, rear two-cylinder air-cooled engine, unit body and frame construction, independent suspension on all four wheels

SMALL two-passenger car, the "New 500," has been introduced by the Fiat Company of Turin, Italy. While following the Fiat tradition of small vehicles, it incorporates a new two-cylinder air-cooled engine at the rear. Body outlines, the unit body and frame construction and the independent suspension of all four wheels are reminiscent of the four passenger 600 introduced in 1955. Only one body model is offered—a folding soft top.

Making Deluxe Version

While the "New 500" is already in production, the affiliated firm of Bianchi in Milan is preparing a deluxe version of it, using the 500 engine, transmission and suspension units, but building their own convertible two-passenger body. This will probably be displayed in September.

In addition, the Austrian firm of Steyr, where various Fiat models have been assembled in the past, is using the Fiat body and front suspension in connection with its own two cylinder, horizontally-opposed engine and rear swing axle for a new model which is scheduled for appearance in the very near future.

Centrifugal Blower

The engine of the "New 500" is equipped with a centrifugal blower which draws air

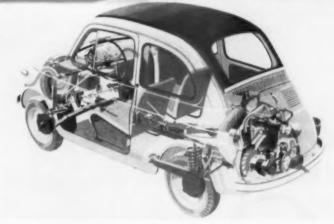
in at an opening placed between the engine hood and the rear window. Intake air is branched off from the cooling air duct, and a second branch leads part of the air stream past the bottom surface of the oil sump for cooling purposes.

After the cooling air has passed the fins of the two cylinders and the cylinder head it is led out of the car in warm weather, or into the vehicle interior for heating in winter. An additional passage leads air back to the intake. This is blocked by a plate valve in summer, but is opened by a thermostatic valve as soon as outside air temperature falls below 68 degree F. It adds preheated air to the intake and not only allows for quicker warming up of the engine, but prevents icing of the carburetor.

Different Mounting

A novel mounting for the engine has been developed. This incorporates a lever with hinges on each end and a spring which is interposed between the lever and the engine. The hinge on the engine side is fitted with a rubber bushing. This arrangement permits the engine to carry out appreciable vertical movements which are not transmitted to the body unit, whereas very little torque reaction movement is possible.

A very ingenious oil filter is built into the engine. This is a cylindrical cavity in

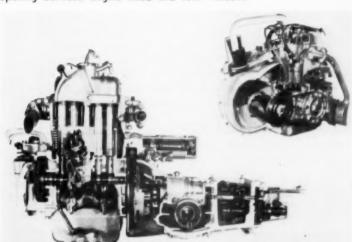


Above is shown phantom view of the small twopassenger Fiat 500. The car incorporates new two-cylinder air-cooled engine at the rear.



Above is pictured a Fiat 500 two-passenger model with a folding soft top. Car is reminiscent of four passenger 600 produced in '55.

Below is shown cutaway view of the Fiat 500's engine and four-speed transmission. Engine has centrifugal blower which draws air in at opening between engine hood and rear window.



the cooling fan drive pulley, which is interposed in the oil stream and which acts as a centrifugal filter. According to the makers' claims this oil filter requires attention only when complete engine overhauls are carried out.

Interior Space

Interior space is quite reasonable despite the very short wheelbase of 72.5 in. In the front overhang there is room for the passengers' legs, the 5.5 gallon fuel tank, the spare tire, the battery and the set of tools.

Final drive ratio is 5.125 to 1, and road speed at 1000 rpm in top gear is 12.6 mph. The fourspeed transmission has no direct ratio, and the three upper

ratios are fitted with dog clutches instead of the more expensive synchromesh units.

Production of the new model has already begun, but export sales are not expected to start till this month (Sept.).

The Fiat name itself owes its origin to the combination of the first letter of each of the following words: Fabbrica Italiana Automobili Torino. The firm was incorporated in 1906. The actual founding of the firm, however, dates back to 1899—by a group of Turin businessmen.

The Fiat company is a vertically integrated company.

Fiat produces its own steel, 603,000 tons in 1956. This was enough to cover Fiat's own needs and also to sell some steel products on the open market.

MOTOR AGE SHOP CLINIC

An absorbing and easy-to-take type quiz based on the service article which begins on page 40



OR September, the Shop Clinic Quiz is based on the article dealing with the lubricating and servicing of universal joints. Read the article carefully. It begins on page 40 of this issue. Then try your hand at this Quiz.

The first section is multiple choice. Select the one answer which is either correct or most nearly correct among all choices given.

- 1. When preparing to lubricate universal joints of Buick models bear in mind
- a) that the universal joint is splined to the front end of the transmission mainshaft.
- b) that the driveshaft must be removed from the car in order to lubricate.
- c) that models are lubricated internally from the transmission and ordinarily do not require disassembly.
- 2. On Cadillac models universal joints:
- a) are lubricated internally from transmission.
- b) should be lubricated after drive shaft is removed from car.

a pan at end of transmission when removing front universal joint on:

- a) Plymouth . . . b) Henry J . . . c) Cadillac
- 4. When servicing universal joints on DeSoto models, bear in mind that:
- a) service on the ball and trunnion type universal joint is the same as on Chrysler Div. models.
- b) cross and yoke type joints appearing on some De-Soto models may be lubricated by means of a Zerk fitting.
- c) in servicing the ball and trunnion type joint (appearing on some DeSoto models). first remove the propeller shaft.

True or False Section

- 5. A general recommendation for universal joint lubrication is at 20,000 to 25,000 mile intervals.
- 6. On Cadillac universal joints, the joint cross bearings are held by "C" washers on the inner edge of each bearing.
- 7. For Chevrolet models, the universal joints need no lu-3. Be prepared to catch oil in brication on models up to and

including the model year of 1954. These have torque tubes and are lubricated from the transmission.

- 8. On 1940 thru 1947 Hudson models, a single driveshaft is used from the rear of the transmission to the axle pinion. In 1948, except for the Jet model, Hudsons were fitted with a center bearing driveshaft having three universal joints.
- 9. In servicing universal joints for Packard, Plymouth and Willys models, follow the general procedure for Chrysler Division models.

ANSWERS TO QUIZ

(turn page upside down)

but DeSoto Div. models not Chrysler Div. 9. False,

8. True

7. True

6. Irue 5. True

d. c

3. € 5' P

J. C

Service Man's Idea Book

Planting for Future Market

A Chicago reader writes in that a car dealer he knows has an interesting way not to forget the teen-age market. When a new car or a used car is purchased, the dealer provides the buyer with a certificate worth \$50 towards the purchase of a car for a teen-age member of the family.

The certificate is valid for several years. This gives time for those youngsters not quite old enough to drive to get their licenses. Then they are interested in "a car of their own."

Wagons on the Roll

Based on current sales, one million station wagons will be sold in 1958. That is the prediction of J. O. Wright, Ford Motor Co. vice-president and Ford Division general manager.

"Thus far this year, one out of every nine cars sold is a station wagon," he added. In 1950, according to Wright, station wagons represented two per cent of industry sales. Last year wagons accounted for 10 per cent of the total car market.

Coffee Break for Customers

Cup of coffee while the customer waits for his repair job is the present policy of Stanley Clark Service. Owner Stan Clark says that he found it irked some motorists to hang around waiting for a repair job or adjustment to be completed. "We made arrangements with a nearby diner to give a free cup of coffee to our customers upon presentation of our card."

Clark adds that besides the goodwill gesture involved, the idea helps keep customers

out of the way when work is being done on their cars.

Sparking Seat Cover Sales

The first in a series of "Good Car Keeping" rallies was held in Dallas recently. Some 50 seat cover manufacturers, retailers, and distributors attended.

Other rallies around the country are being planned.



Vernon Villand (left), executive director of Automobile Seat Cover Manufacturers' Assn., and Arthur Fullmer, chairman of the recent "Good Car Keeping" rally in Dallas, Texas, crown the pretty miss selected as "Miss Good Car Keeping of Texas."





Can they see their way clear?

Customer cars with faulty headlamps are good replacement sales targets

F you're interested in selling more service and accessories to your customers, have your staff check on the ones who drive around without really seeing where they're going. Generally, their windshields are oil smeared, their headlights are weak and they lack protection from daytime glare and nighttime bright lights.

Watch for these dangerous conditions and defects. Follow through by correcting them. In addition your shop or service dept. is performing a public service for safety.

Why not conduct a good vision campaign at your service station to extend over a one month period? You can start by advertising in the local paper. You can also use handbills and inexpensive give aways such as blotters, matches, balloons or memo pads. All will spark your better visibility campaign.

Use Other Sources

Other sources of material include your local automobile club and accident prevention bureaus.

As far as around-the-shop advertising is concerned, think in terms of your windows by installing a dramatic display. This may include photographs of wrecked cars.

Another idea that will dramatize the neccessity for good vision can be illustrated with an old windshield. Muddy up the glass. Then clean one side in a half circle to show that only one wiper blade is working. Divide your window into two highway scenes using toy automobiles and a miniature pedestrian on the highway. Add a small spotlight to illuminate one side of the highway. Block the other side out to show no lights. Tie

this up with a slogan. Anyone who sees it will then realize how poor vision can come from dirty windshields and faulty lighting.

Many service station operators find that they can also "see" more profits if they make it a habit to check car lamp bulbs whenever possible. The routine is simple: 1-Whenever a customer stops at your shop, wipe the headlights clean and suggest that the car owner turn on his lights for a test. Note whether they are dim or unbalanced. 2—When a car is in the shop for repair, go over every lamp bulb for possible replacement. Make this a part of your regular service. 3-Always make a notation on the service ticket as to whether the lamp bulbs are okay or need replacement. Don't forget that if both headlights are dim to take is as a signal that there's trouble ahead.

You will also find it profitable to obtain a good headlight aiming and adjustment chart or machine for your shop. Attach it to pulleys to raise it out of the way when not in use.

To sell more fog lights, try a simple demonstration item that one shop in Pennsylvania utilized successfully. It consisted of a 3x3 foot frame of wood on which cheesecloth was stretched tightly. This was tacked on all edges.

A demonstration car, which was equipped with fog lights, was made available. Then the customer was invited to watch. First the ordinary headlights were snapped on, which illuminated all of the cheesecloth area. Then the fog lights were added, which dramatically proved the way that their beams shot straight through.



Power lubrication by push button

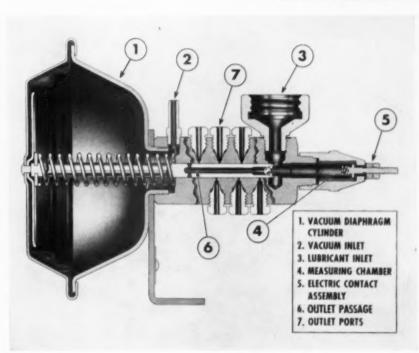
Description of the principles of operation of the popular "Multi-Luber"

THE popularity of powered lubrication systems continues. Introduced as an option on 1955 Lincoln and Mercury cars, the system has continued to be offered as a special feature accessory on subsequent '56 and '57 models.

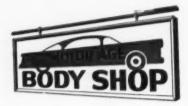
The system—known as the Multi-Luber is also available as an installation kit on cars other than Lincoln and Mercury. The system itself consists of a master cylinder Continued on page 120



Lift view of some Multi-Luber hose lines.



Exploded view of vacuum chamber and outlet ports.



NDEPENDENT garages and automobile dealerships which "farm out" some or all of their body and paint work may be passing up extra profit. Athough it could be poor business to set up a collision shop in an establishment with limited space, the possibilities should be analyzed. There are a great many small garages which do a sufficient volume to warrant their own body and paint shop. Many automobile dealers have been giving this department more thought

BODY SHOP UPS SERVICE

Alfred Steiner, Michigan car dealer, finds that a collision and paint shop in his garage

Below a bake oven is used to insure the customer a perfect paint job. More than 50 percent of dealer's volume from the garage comes from the paint and bump shop.





in recent years. Results have been favorable.

One such car dealer who has found a collision and paint shop highly profitable is Alfred F. Steiner Co., Grosse Pointe, Mich. Steiner, the only Ford dealer in the Detroit area who has a body shop integrated within its service department building, has never neglected this part of his operations. He went into business more than 25 years ago.

Actually, the results can be stated briefly: More than 50 per cent of the dealership's

Out of a total shop volume of \$168,000 in one 12-month period, Steiner realized \$85,000 from the bump and paint shop alone. This amount covered only labor charges and did not include substantial profits gained from

volume from its entire garage and service

operations comes from the bump shop. Yet

this operation occupies only a relatively

small portion of the garage. The body shop

takes up less than 3000 sq ft of the 18,000

the sale of body and paint supplies.

VOLUME

can become a profitable asset

Below is shown the Alfred F. Steiner Co. This car dealer is profiting by setting up a collision and paint shop within his service dept.

Brings in More Jobs

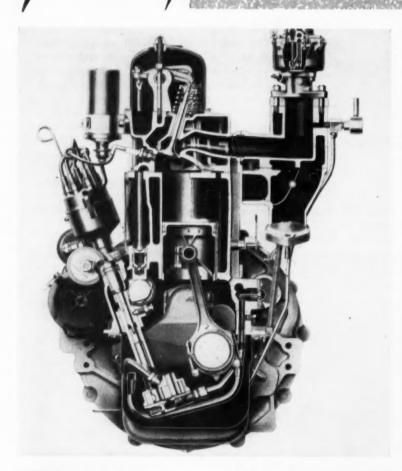
sq ft building.

The body shop operation also has been credited with bringing in additional service work. It has boosted total service orders to approximately 900 a month. Service volume has been increased to such a point that a "second" service department was needed to handle the volume of work. Designed primarily for service work on older model cars, the 42 x 42 ft annex was erected on the used car lot a block away from the main building. The auxiliary service building has four stalls and most of the equipment required for minor service work. It takes the burden off (Continued on page 100)





TROUBLE SHOOTING



1953 Chevrolet Burning Oil After Motor Job

We have a 1953 standard transmission Chevrolet which we recently re-bored to .020, installed new pistons, rings, rods, camshaft, bushings and lifters. We milled head .060 and ported same. The original aluminum timing gear seemed OK. Vacuum reads 17 inches at slow

idle, compression 130 lbs. Our customer drove this 4,000 miles and used a quart of oil every 300 miles. We recently re-rung it again with another brand of rings and motor continues using oil. There is also a knock on acceleration of speeds 20-25 mph which will short out on cylinder #4 that we cannot find after checking clearance and alinement.

Robert Bryce A & C Motor Service Alexandria, Minn.

TO determine where this oil is disappearing it will be necessary to make a few tests. First, make sure the oil pan and valve covers are not leaking. Check these by putting some clean paper on the floor under the engine after it has been driven hard for a few miles. Also, check the tail pipe. Rub your finger around the inside of the tail pipe, if black soot is found then oil is definitely being burned in the combustion chamber. It could be seeping down the valve guides or passing the rings. To pinpoint the valve guides, remove the valve cover and block off the oil supply line to the valves. If this cures the oil consumption, remove the cylinder head

FOR ADDITIONAL SERVICE INFORMATION REFER TO CHILTON'S

PROBLEMS



Technical Editor



and install new valve seals. Sometimes changing from a detergent oil to a straight base oil will help. The detergent oil makes it harder for the rings to seat.

Having Trouble with 2 Cars That Are Always Overheating

I am having trouble with two Dodge cars, one is a 1948 and the other a 1949. Both are overheating. I have cleaned and roded the radiators and installed water pumps and fan belts. I removed the thermostats. On one I have replaced the water distributor tube, removed the bottom freeze plugs and washed out the block. But they continue to overheat. One will do it in the city, the other on the road.

Reuben Adly Ruby's Auto Service Baltimore 2, Md.

SINCE you are absolutely sure the cooling system is functioning properly, I would suggest checking the ignition timing to make sure it is set properly. Then it is possible you have a leaky head gasket. It would be worth-while to remove the heads for a close look at the gaskets.

Buick Develops a Jerk At Speeds Below 20 M.P.H.

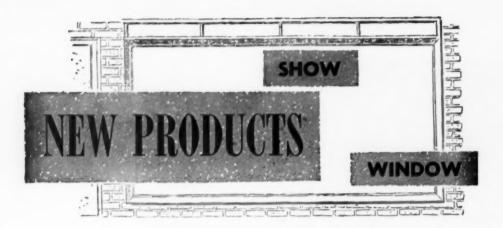
I have a customer who has a 1955 Buick Special with a syncro-mesh transmission. At intervals this car will develop a jerk at a steady speed below 20 m.p.h. in high gear. There is no miss under acceleration but just at a constant steady speed below 20 m.p.h. It has a two-barrel carburetor. I have done the following: Cleaned. serviced and set the carburetor according to factory specifications. Installed new spark plugs. Removed distributor. Replaced the points and tested it on the distributor tester and adjusted it according to specifications. I installed a gas filter. I tried a fuel regulator which keeps the pump pressure at a constant 2 lbs, but it didn't cure the trouble, so I removed it. The jerking occurs usually after it has run for awhile. The car has only 9,000 miles on it. When road testing, the car seems to be getting too much gas. I have rechecked the carburetor twice and can't find anything wrong with it.

John Dyck Swan Service Garage Winnipeg 2, Manitoba Canada

FROM the description of your problem it sounds to me like it could be that the valves are sticking. In which case I would recommend purging the carburetor with a good tune-up oil. Also make sure that the lifters are not building up pressure. Even though this job has 9,000 miles on it, it is still possible that you might be having valve trouble. I have also seen cases where the carburetor was the culprit. It would have a lean condition at this one critical spot. In this case, changing the jets making the mixture a little richer would take care of it. I would suggest trying this before you do anything else.



MOTOR AGE FLAT RATE AND SERVICE MANUAL



Work Solenoids

A new line of rebuilt work solenoids is now being marketed. According to the company, these work solenoids are used to make electrical contact and also to pull the starter drive into engagement with the engine flywheel gear. The company states that each unit is an original equipment solenoid, completely rebuilt. Write: Arrow Armatures Company (M.A.), 17 Fordham Road, Boston 34, Mass.

New Spark Plug

A new type of spark plug for 1957 Fords, Lincolns, and Mercurys has been introduced. Designated as the F-14Y, it is a plug with an extended core nose which, it is said, provides antifouling characteristics. Accord-



ing to the company, the F-14Y also incorporates the new powerfire electrode for longer life

and improved performance. This new plug is an addition to the line of extended core nose types. Write: Champion Spark Plug Company (M.A.), Toledo 1, Ohio.

Load-Leveler

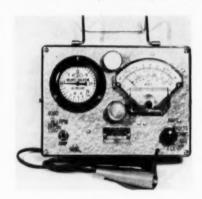
The Load-Leveler, said to be a heavy load unit which combines an oversize shock absorber and load-leveler spring has been introduced by its manufacturer. The company claims that the shock absorber is scientifically



calibrated to control the standard equipment springs on the vehicle as well as the overload spring. The unit is said to prevent bottoming, stabilizes the car on curves, and increases road clearance. Write: Monroe Auto Equipment Company (M.A.), Monroe, Mich.

Portable Tester

A new test instrument, the Auto Aid, is now being introduced. According to the manufacturer, the portable test set includes an 80 ampere shunt, resistors - volt regulator, one foot test lead, manual, cover



and clamps. The tester has a vacuum gage, an ammeter, a voltmeter, an ohmmeter, and a tachometer. The Auto Aid, it is said, can be used to test any 6 and 12 volt engines. All five test instruments are combined in the one portable tester. Write: Westberg Mfg. Co. (M.A.), 144 S. Coombs St., Napa, Calif.

Bloc-Chek

According to the manufacturer, a positive test for internal combustion engine leaks can be made with a Bloc-Chek. It is said that the Bloc-Chek will tell the mechanic whether or not an internal combustion leak is present, regardless of whether the leak is caused by a faulty gasket, a cracked or warped cylinder head, or a cracked block. It will permit the mechanic to determine the cylinder

or cylinders where the leak is occurring, the company states.



Write: P&G Manufacturing Company (M.A.), 305 N.E. Russell St., Portland 12, Ore.

Liquid Detergent

A new liquid detergent, Oakite LSD, is said to be developed for use in solution lifting steam guns and self generating steam cleaning equipment. According to the company, this was developed to simplify the preparation of steam cleaning solution and to reduce the clogging of coils in self generating equipment. It will handle a wide variety of steam cleaning operations ranging from light to medium-heavy duty. Used as recommended, it is claimed to be safe on steel, brass, and magnesium and to have no effect on painted surfaces. Write: Oakite Products, Inc. (M.A.). 1240 Rector St., New York 6. N. Y.

Windshield Sealer

Composed of rubber base ingredients, "Wind-Shield" is said to seal cracks and waterproof leaky windshields. According to the manufacturer, it can be used by applying the spout of the plastic container along or over the leaky area and squeezing. It is claimed to be safe to use,

non-inflammable and will not mar or damage auto finish. Write: Rubber Magic, Inc. (M.A.), 4312 Third Ave., Brooklyn 32, N. Y.

Steam Cleaner

A new steam cleaner, known as the "Handyman," has been announced. According to the manufacturer, the steam cleaner has a 60 gallon capacity and is suitable for light duty general utility cleaning. It is said to be a self-contained unit, operating on water pressure and requiring no auxiliary pump. Write: Clay-



ton Manufacturing Company (M.A.), P. O. Box 550, El Monte, California.

Chemical Motor Tune-Up

A new product Ring-In, has recently been introduced. According to the manufacturer, this product is a chemical being used strictly through the air induction. It is said to remove combustion chamber deposits which cause high and uneven compression, seats rings, eliminating the chief cause of formation of carbon deposits by maximum ring seating during the new engine break-in period. It is also said to clean valve guides

and stems, giving a more even compression and permitting lubrication to do its work properly. Write: Ring-In Chemical Products Co. (M.A.), 5300 Los Gatos Hwy., Santa Cruz, Calif.

Piston Resizer

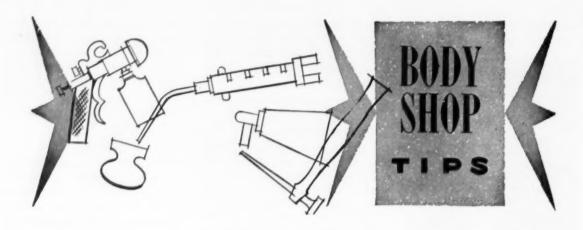
A cold forge inside peening method, it is said, can be used to restore an oversize worn piston to original cam contour. According to the manufacturer, the piston resizer will take the rock out of the piston, increases life and efficiency of rings, helps control oil and eliminates piston clatter. It is said that the piston resizer can do a job on any type piston, steel, cast iron, aluminum, or composition to oversize desired. Write: Riordan Specialties Inc. (M.A.), 32 South Clarkson, Denver. Colo.

Engine Analyzer

A new electronic engine analyzer called the "Anal-O-Scope" has been introduced. It is said to provide a visual picture of the ignition system of an engine. Either battery or magneto operated systems may be tested, showing the complete ignition cycle in the sequence in which it occurs, it is stated. The "Anal-O-Scope" may be operated by 110 volt current or off the car battery. According to the com-



pany, it enables the electrical performance of the entire circuit to be observed while the engine is running. The working (Continued on page 112)



BODY SHOP TIPS are worth

If you've developed an idea that has helped you to do body and fender work or painting better or faster, it may be money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

Using A Mirror To Check Stop Lights

When inspecting a car, it is necessary to use a brake pedal jack or have another man tell you whether or not both stop lights, tail lights, back-up lights and turn signals are working. I have a mirror mounted on the wall to the left rear of the car at the proper angle. I just turn around and see for myself whether the lights are working or not. James A. McGowan, Mc-Gowan Specialized Auto Repairs, 1311 Chester Pike, Crum Lunne, Pa.

An Easy Way To Sand Out Lead Seam

I have found a way to sand out lead on '55 and '56 Chevrolets. At the top of the quarter panel where it joins to the back

window opening, there is a seam that is just about impossible to file. I filled a foot long piece of garden hose full of sand and stopped each end of it with a wooden stopper. Then wrapped the hose with 80 production sandpaper and can form any shape I desire to with the lead. George Beck, Hardin Sales & Service, Orion, Illinois.

Short Cut For Straightening Fenders On 1957 Chevrolets

To straighten a minor dent in a 1957 Chevrolet fender, a lot



of time can be saved by removing the air duct. To remove, take out the headlight first, then make a special puller out of a turn buckle to pull the duct together. Remove the four screws attaching front air duct to the fender headlamp mounting flange. The rear of the duct is supported by the fender skirt. Using a hack-saw, cut at four locations in the headlamp mounting flange of fender as shown in figure. Bend back metal taps formed by cuts made in fender flange. Insert a screw driver between the fender and air duct down and to the rear. Continue prying down on duct until the upper surface of duct is below fender flange in the crown area of fender. Insert the puller tool through headlamp opening and position tool with jaws clamped on outer shell of duct. Contract turnbuckle until air duct collapses to a diameter that will allow the duct to be started through the enlarged headlamp opening. Grasp the turnbuckle on the puller tool and work the duct forward and out of the fender. If the rubber coupling between front and rear air ducts was not withdrawn with the front duct, remove this coupling from rear duct through the existing opening in the fender skirt. Before reinstalling front air duct, the rubber coupling used between front and rear air ducts should be placed in position. Working through the fender skirt opening slip rubber coupling over end of rear (Continued on page 138)



MOTOR AGE Recommends



TIME TO "EDUCATE" YOUR CAR!

Let your Automotive Serviceman "school" your car in his service shop "classroom." With his expert know-how and equipment, your car will soon graduate with honors—ready for safe, comfortable driving.

1957 New Passenger Car Registrations by Makes by States*

Arizona June 164 85 Arkansas June 66 88 1 Arkansas June 66 86 86 Arkansas June 66 34 6 Mos. 1462 402 California June 1642 874 16 Colorado June 1869 573 Connecticut June 89 165 Connecticut June 89 165 Connecticut June 90 57 Connec		Buick	Chev- C	- De Soto	Dodge	Ford	Hud- son	Lin- coin†		Metro- politan	Nash	Olds- mobile	Pack- ard	Ply- mouth	Pen- tiac	Ram- bler	Stude- baker	All Others	Total
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Manager Mana	402	139	17673 402	2 57 6 1	8 78	18760 350	13	258	2399	89	88	3644 118	39	4838 186	3870 122	454 70	472 29	1016	1,764
6 Mos. 17600 6009 5	2044		2044 8132	3 16 1 46		1961 7750	32 25	76 176	510 1361	17 44	18 62	652 1975	6 35	858 3189	658 1862	318 715	149 387	206 623	9,471
6 Mos. 7790 2016	1850	17600	51850	1 398	7 7807	51795	177	1630	9788	123	624	16261	271	22026	12946	3918	2494	3478	218,497
Amangan	3896 0217	7790	20217	7 31 8 186		4142 23284	16	70 527	750 4462	20 63	29 215	1012 6447	21 140	1663 9153	890 5176	293 1126	346 2014	198 867	91.449
June			2168 11572	6 9 1 64		2018 11389	10 71	23	341	5	21	378 2845	44	747	379 2405	159 695	95 521	85 442	7,585
Sentucky	2017	458	2017	9 9	6 250	1797	9	189	2215 327	17	100	395	3	4285 609	409	120	96	95	6,982
Section Sect	1003		11003	3 67 5 6		10618	56	213	2066 271	20	98	2878 408	44	3792 703	2396 329	592 40	485 56	431	6,51
taine 6 Mos. 2894 854 1 June 225 75 6 Mos. 970 258 Taryland June 370 121 6 Mos. 3107 905 121 Tassachusetts June 745 274 746			10198	2 48	1 1204	10058	32	114	1619	16	23	2498	30	3422	2003	220	266	215	36,491
Aaryland June 370 258 Aaryland June 370 121 Aassachusetts June 749 274 Alsasachusetts June 749 274 Alchigan June 749 274 Alchigan June 1815 5860 1860 Allinnesota June 585 157 Alisalasippi June 231 61 Alisalasippi June 232 24 Alisalasippi June 1025 Alisalasippi June 1045 Alisalasippi June 288 80 Alisalasippi June 277 80 Alisalasippi June 88 25 Alisalasippi June 1025 Alisalasippi June 1025 Alisalasippi June 1025 Alisalasippi June 283 3454 25 Alisalasippi June 583 3454 25 Alisalasippi June 393 384 Alisalasippi June 393 376 Alisalasippi June 393 76 Alisalasippi June 398 48 80 Alisalasippi June 398 3740 Alisalasippi June 398 3740 Alisalasippi June 398 3740 Alisalasippi June 398 3740 Alisalasippi June 398 398 49 Alisalasippi June 398 398 49 Alisalasippi June 398 398 398 398 398 398 398 398 398 398			2368 14808	4 6 8 67		2084 13519	14	28 215	334 2181	23 66	32	488 3341	34	4331	505 3238	67 251	68 357	71 400	7,600
Aaryland	968 3304			6 6 2 23		850 3226	7 35	13 78	171 584	6 39	38	148 742	15	414 1422	206 833	103 456	193	130 524	3,610
Assachusetts June 748 274 Alchigan June 1815 686 Alchigan June 565 157 Alsasiappi June 231 61 Alsasouri June 610 256 Alchigan June 231 61 Alsasouri June 610 256 Alchigan June 134 52 Alchigan Bandaria Bandaria Bandaria Bandaria June 298 60 Alchigan Bandaria Ba	2169	370	2169	3 11	5 479	1951	10	16	292	19	13	418	8	1154	499	96	78	151	8,142
Minnesota June 1815 686 686 4736 157 156 157 156 157 147 1	2843 2974		12843 2974	4 90 3 24		12600 3062	71	219 66	2169 496	90	78 13	3169 823	80 10	7419 1391	3261 623	507 402	531 95	1033	53.040 12.581
Section Sect			16116	7 164 5 57	1 3293	17667	112	535	3333	142	157	6141	62	8414	4308	2237	534	2796 700	78,557
Section Sect	0360	13061	40360	2 410	6 10030	8875 49475	133	194 1280	1542 10456	74 289	20 259	1568 11610	109	4019 22279	1585 10113	628 2878	279 1271	3144	190,727
Missispips June 231 61 Missouri June 610 256 Mos. 1731 384 Missouri June 610 256 Montana June 134 226 Montana June 134 228 Montana June 298 60 Mos. 6 Mos. 1780 419 Mevada June 298 60 Mos. 1780 419 Mos. 271 156 Mos. 271 156 Mos. 272 156 Mos. 274 156 Mos. 274 175 Mos. 274 277 Mos. 274 277 Mos. 275 277 Mos. 2	2351	585 4736	2351 14386	8 14 5 105		2570 15901	3 57	41 346	394 3004	12 32	22 223	561 4748	10	932 6108	438 3329	289 1280	142 923	103 621	9,325
Section June 610 256	1106	231	1106	0 4	7 123	1019		15	152	3	3	228	4	368	213	24	41	45	3,743
June	7008 3250			4 30 1 16		6389 2984	3 4	91 37	960 423	14	16 23	1463 619	20	2257 1245	1392 599	91 159	246 129	200 157	23,680 11,252
Section Sect	578		20859	1 132 7 3		19269 553	43	326	3104	49	140	4764 127	74	8336	3987 122	812	844 38	847 115	75,300 2,356
Sevaria Seva	2663	860	2663	6 17	7 590	2644	24	63	550	32	28	775	17	1049	548	345	168	425	11,530
Aure 23 24	1142 6014	1780		3 3 21		1171 6026	23	93	204 1147	2	46	1361	35	361 1880	168 1095	58 282	55 257	35 163	4,005
See Hampshire June 88 25	164 1000	23	164	7 1	1 13	163	1	11	30			32	1	37	52	2	9	79	659 4.748
lew Jersey June 1025 478 6 Mos. 7688 3454 2 10 Mos. 7688 3454 2 10 Mos. 7688 3454 2 10 Mos. 825 740 10 Mos. 825 124 10 Mos. 986 1 10 Mos. 986 1 10 Mos. 986 1 10 Mos. 986 1 10 Mos. 10 M	483	88	483	9 2	8 84	1113 379	1	72	280 64	5	7	326 62	10	316 198	374 97	70	101	378 86	1.756
iew Mesico June 274 7 2 2 2 2 2 4 0 2 2 4 0 2 2 4 0 2 2 4 0 2 4 0 2 2 4 0 2 2 4 0 2 2 4 0 2 2 2 4 0 2 2 2 4 0 2 2 2 4 0 2 2 2 4 0 2 2 2 2	2273 4022			8 16 5 51		2033 4291	11	59 89	418 715	26 37	29 20	304 1051	10	978 2335	620 851	321	149 262	479 551	9,401
dew York June 325 240 June 3233 1382 1 forth Carolina June 3233 124 forth Dakota 6 Mos. 3736 956 1 forth Dakota June 3736 956 1 bhio June 3278 956 1 bhio June 3232 542 3 June 328 542 3 4 June 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 142 399 399 142 399 399 142 399 399 142 399 399 399 399 399 399 399 399 399 399 399<	4831	7688	24831	2 354	8 6777	25186	109	906	5098	168	154	7055	198	14504	6135	1478	1399	2732	116,072
Section Sect	1133 3219			4 6 3 17		1068 2914	7	22 79	230 568	15 23	18	250 793	14	355 887	234 742	56 124	34 115	146 294	4,233 11,768
June 583 124			12298 57416	6 125 0 752	6 3059 8 16140	12582 61737	50 291	307	2616	109 463	77 491	3717 20555	58 323	6453	3096 16139	987 4317	594 2772	2223 10182	56,083 287,668
Description Description Description Description	1919	583	1919	9 9	0 275	2278	6	2329 24	13826 268	11	6	474	7	735	482	104	90	100	7,683
Dune 2328 542 Oklahoma June 359 142 Oklahoma June 359 142 Oregon June 303 76 Of Mas. 2135 762 Oregon June 303 76 Of Mas. 2062 629 Pennsylvania June 2266 739 Of Mos. 13714 4355 Of Mos. 13714 4355 Of Mos. 2006 643 Outh Carolina June 214 Outh Dakota June 214 Outh Dakota June 91 Outh Dakota June 2165 Outh Dakota June 986 Outh Dakota June 303 Outh Dakota June 303 Outh Dakota June 304 Outh Dakota June 304 Outh Dakota June 307 Outh Dakota June 308 Out	2219 550		12219 550	4 72 6 3		14401 512	30	234	1926	80	83	3219	43	4281 188	2824 69	493 88	487 26	513 19	48.874
Section Sect	2977		2977	1 19		2928	12	57	530	4	49	732	15	966	418	238	146	97	10.944
Pregon	7408		43012	7 61 9 444		8738 50377	17 228	146 1214	1528 10332	50 249	57 383	1787 13404	34 242	4000 22871	1908 12138	463 2235	336 1852	465 2546	33,024 202,737
Pergon June 303 76	1788 8588			5 6 5 48		1620 9163		27 141	284 1608	10	44	389 2249	2 26	649 3126	358 1737	84 343	49 265	87 458	6,197 32,733
Fennsylvaria June 2266 739	1260	303	1260	7 10	0 210	1318	4	28	251	18	- 6	261	8	524	266	146	119	370	5.363
thode Island June 97 49 4355 4 4355 4 4001, Carolina June 284 48 6 6 Mos. 2006 463 311 48 6 6 Mos. 2006 463 468 6 Mos. 2006 463 4738 1 6 6 Mos. 2006 463 4738 1 6 6 Mos. 2006 463 4738 1 40 6 Mos. 2006 463 4738 1 40 6 Mos. 2006 463 4738 1 40 6 Mos. 2008 4003 4003 4003 4003 4003 4003 4003 4	7752 7619	2266	7619	3 69 3 81	9 1972	7606 7170		240 145	1532 1587	116 51	85 81	1773 1882	44	2497 4593	1819 1884	754 588	469 421	2066 845	32,109
outh_Carolina June 284 48 48 48 48 48 48 4		13714	40430	8 490	5 10800	38664 564	330	1223	9033	206	482	11667 97	327	25187 212	10771	2654	2313	3820	186,749
Section Sect	2519	733	2519	9 23	3 510	2981	31	94	402	33	70	842	21	1393	579	332	125	534	12,132
June 91 13 164 Fennessee	886 6464			1 3 3 31		964 7355	7	12 74	106 963	6 37	5 24	167 1453	13	356 2317	187 1326	17	206	282	3.263 24,500
Figure First Fir	350	91	350	8 1	9 58	388	1	7	46		2	40	2	129	62	48	20	13	1.30
exas June 2165 664 Itah June 183 3740 8 Itah June 183 44 fermont June 96 30 fermont June 96 30 fermont June 96 30 fermont June 96 30 fermont June 91 109 lirginia June 311 110 Vashington June 341 110 Vashington June 357 84 fermont June 357 84 Visconsin 6 Mos. 2039 384 Visconsin June 92 213 Vyoming June 97 25 fermont June 97 25	2848 1842	514	1842	4 16 2 9	0 260	2903 1998	3	48 22	445 244	8	11	658 353	16	954 616	536 410	246 88	171 58	60	10,657 6.771
Brain Brai	2724 9624		12724	8 59 7 38		13486	30 17		2164 1338	42 45	72 40	2821 2094	31 15	4382 3304	2677 1606	447 281	392 224	270 423	47,366
ermont 6 Mos. 968 292 Irriginia June 96 30 Irriginia 5 Mos. 529 109 Vashington June 341 110 Vashington June 341 110 Vest Virginia June 357 54 6 Mos. 2039 354 Visconsin June 924 213 Vyoming June 97 25 6 Mos. 563 150	0236	12538	50236	3 207	9 5345	50398	74		7829	198	204	12017	90	15827	9391	1309	1183	1933	178,352
fermont	526 2607			7 6 7 33		548 2952		7 89	134 719	1 4	5 26	143 902	14	254 1173	138 791	34 161	20 124	87 384	12.35
Figure June 618 149 6 Mos. 4003 1022 Vashington June 341 110 8 Mos. 2192 578 9 Fest Virginia June 357 64 9 Fest Visconsin June 924 213 10 Fest Visconsin June 927 25 10 Fest Visconsin June 97 25 10 Fest Visconsin 563 150 11 Fest Visconsin 150 12 Fest Visconsin 150 13 Fest Visconsin 150 14 Fest Visconsin 150 15 Fest Visconsin 150 15 Fest Visconsin 150 15 Fest Visconsin 150 15 Fest Visconsin 150 16 Fest Visconsin 150 17 Fest Visconsin 150 17 Fest Visconsin 150 18 Fest Visconsin 150	415	95	415	7 1	6 75	423	2	12	58	8	7	66	4 7	166	88	69	29 97	125	7.15
Vashington June 341 110 6 Mos. 2192 578 Vest Virginia June 357 64 1 June 357 64 Visconsin June 924 213 6 Mos. 6011 4657 1 June 97 2 6 Mos. 563 150	1772 2733	618	2733	8 8	8 359	1721 2822	7	38	274 472	27 24	28 13	339 473	9	675 1154	402 580	240 164	93	429 279	10,309
Vest Virginia June 357 64 64 66 Mos. 2039 354 Visconsin June 924 213 66 Mos. 6011 1457 1 1457 1 1467 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1623		15353	6 100 0 9		15143 1740		268 29	2858 268	117 38	109	3069 279	93	6122 643	3789 340	727 218	594 86	1402 548	59,07 6,81
Visconsin 8 Mos. 2038 234 June 924 215 6 Mos. 6011 1467 1 June 97 25 6 Mos. 563 150	8356	2192	8356	5 54	7 1449	8876	46	196	1321	218	137	1727	42	2806	1722	933	381	2054	34.25
Visconsin June 924 213 8 Mos. 6011 1457 1 Vyoming June 97 25 6 Mos. 563 150	1477 7135			9 7	2 291 2 1496	1414 7184		16	304 1514	34	49	283 1474	13 67	561 3026	327 1680	69 318	90 428	420	28.42
Wyoming June 97 25 6 Mos. 563 160	2710	924	2710	5 19	0 539	2931	10	42	439	6	47	679	15	1021	559	516	149	179	11.39
6 Mos. 563 160	268 268		15630 268	5 124 3 1	8 3085 9 37	16418 249		399	3235	45	422	5108 75	93	5489 83	3810 50	2499	810	1034	1.01
Total fune 1807 22230 11147 12	1634			0 12		1540			352	6	22	490	ä	499	350	103		66	6.40
				3 853						1084	799	28856	480			8897	5573		517,043
				7 913		120696				688	2020		2772		31664	6304		9205	539,777
		218014	722398 805100		8 136133 0 113587	763670 865733	3222 7138		144270 142892			199295 238201	3318	315770 257318	171581	43940 36830		80282 42432	3,070,875

^{*} Data from R. L. Polk & Co.



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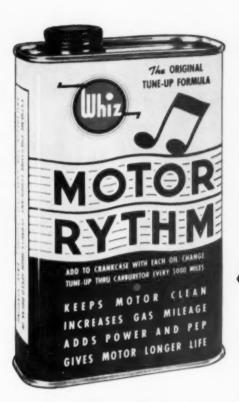
Current Passenger Car Price, Weight and Body Table

Following are prices at factory for cars with standard equipment as of August 26, 1957. State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight	BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
AMERICAN	МОТ	ORS	COI	P.	CHRYSLER DODGE, Cont'd	COR	P. c	ont'd		FORD MOTO	OR C		ont'd		GENERAL CHEVROLET, C	MOTO		con	r'd
Super Sedan, 4d	2520	230	2750	3631	Coronet V8 Club Sedan	2262	181	2443	3530	Capri Coupe	4203			4585	Sport Coupe Sport Sedan	2095 2156	209 214	2304 2370	3292 3359
Hellywood, 2d Custom	2604	236	2840	3655	Sedan, 4d Lancer, 2d	2337	187	2524 2545	3620 3570	Sedan, 4d Hardtep, 4d	4339 4339				Sta. Wag., 2d Sta. Wag., 4d	2279 2329	223 227	2502 2556	3359 3430 3471
Sedan, 4d Hellywood, 2d	2697 2781	243 249	2940 3030	3693	Lancer, 4d Convertible	2436 2600	194	2630 2807	3865 3815	Premier	4668			4620	Sta. Wag., 9p Bel Air V8	2429	234	2663	3580
,,		-		-	Coronet D501 Club Sedan	3039	240	3279	3885	Sedan, 4d	4804 4804	358 358	5162 5162	4710 4860	Sedan, 2d Sedan, 4d	2127 2175	211 215	2338 2390	3265 33 6 4
METROPOLITA Hardlep	N* 1406	121	1527	1825	Convertible	3370	265	3635	3975			300			Sport Coupe Sport Sedan	2183 2244	216 220	2399 2464	3308 3368
Convertible	1428	123	1551	1765	Sedan, 4d Lancer, 2d	2479 2532	198 202	2677 2734	3620 3585	MERCURY					Convertible Sta. Wag., 4d	2380 2444	231 236	2611 2680	3438
HASH					Lancer, 4d Cust. Royal V8	2578	205	2783	3690	Sedan, 2d Sedan, 4d	2352 2417			3875	Sta. Wag., 2d Cervette V8	2609	248	2887	3460
Amb. Super Sedan, 4d	2526	230	2750	3639	Sedan, 4d	2637 2673	200	2846 2885	3690 3670	Phaeton, 2d Phaeton, 4d	2462 2527			3870 3890	Convertible	3176	289	3465	2730
Ctry. Club, 2d Amb. Cust.	2804	236	2840	3665	Lancer, 2d Lancer, 4d	2739	212	2956	3750	Convertible	2752			4035	OLDSMOBILE				
Sedan, 4d	2897 2781	243 249	2940 3030	3701 3722	Sta. Wagons	2883	228	3111	3810	Montclair Sedan, 4d	2922			3925 3900	Series 88 Sedan, 2d Sedan, 4d	2478 2538			3942 4000
Ctry. Club, 2d	2/01	249	2020	9122	Suburban, 6p Sierra, 6p, 2 st.	2618 2697	208 214	2828 2911	3830 3930	Phaeton, 2d Phaeton, 4d	2967 3042			3905	Holiday Cpe.	2591		*****	3963
RAMBLER					Sierra, 9p, 3 st. Cu. Sier., 6p, 2st. Cu. Sier., 9p, 3st.	2815 2828	223 224	3038 3062	4015 3980	Convertible Topk, Cruis.	3147	1	*****	4010	Holiday Sed.	2663 2895		*****	4062 4232
DeLuxe 6 Sedan, 4d	1757	163	1920	2911		2947	233	3180	4030	Sedan, 2d Sedan, 4d	3452 3537			4005 4015	Fiesta Sed.	2914 3017		*****	4281
Super 6 Sedun, 4d	1890	175	2065	2914	Southampt., 2d	4321	340	4661	4640	Sedan, 2d	2352				Super 88 Sedan, 2d	2687		*******	4001
Sed. Hdt., 4d Sta. Wagon, 4d	1969 2158	181 104	2150 2352	2936 3042	Sedan, 4d Southampt., 4d	4416 4416	347	4763 4763	4640 4780	Sedan, 4d Phaeton, 2d	2417 2482		******		Sedan, 4d Holiday Cpe	2745 2884			4044
Gustom 6 Sedan, 4d	1974	181	2155	2938	Crown Imp. Southampt., 2d	4817	377	5194	4755	Phaeton, 4d	2752 3733		******	*****	Holiday Sed. Convertible	2956 3132		******	4117
Sta. Wagen, 4d Super 8	2242	200	2442	3076	Sedan, 4d	4945 4945	386 386	5331	4740 4920	Sta. Wagons Commut., 2d, 6p	2657			4115	Fiesta Series 98	3220			4364
Sedan, 4d Sta. Wagen, 4d	2011 2279	184	2195 2482	3223 3359	Conv. Coupe Le Baron	5123	400	5623	4830	Commut., 4d, 6p Commut., 4d, 9p	2722			4195	Sedan, 4d Holiday Cpe.	3398 3578			4322
Gustom 8 Sedan, 4d	2095	190	2285	3259	Sedan, 4d Southampt, 4d	5258 5258	410 410	5668 5668	4765 4900	Voyager, 2d, 6p	3122 3277			4240	Holiday Sed. Convertible	3649 3838			4388
Mard Top, 4d Sta. Wagon, 4d	2174 2363	196	2370 2572	3269 3392	PLYMOUTH	0200	***	0000	1000	Voyager, 4d, 9p. Col. Pk., 4d, 9p.	3377				PONTIAC				
Hdt.Sta.Wag.4d	2442		2657	3409	Plaza V8 ^a Bus, Coupe	1825	149	1974	3315	GENERAL	MOT	ORS	co	RP.	Chieftain Sedan, 2d	2234	229	2463	3518
					Club Sedan Sedan, 4d	1927 1970	157 160	2084 2130	3330 3405	BUICK Special 40					Sedan, 4d Catal. Cpe	2293 2295	234	2527 2529	3566
					Savoy V8 Club Sedan	2056	166	2222	3335	Sedan, 2d Sedan, 4d	2352 2412	244 248	2596 2680	3955 4012	Sta. Wag., 2d	2374 2584	240 257	2614 2841	3635
CHRYSLER	COK			1	Sedan, 4d Sport Coupe	2099 2132	170 172	2269	3415 3410	Riviera, 2d Riviera, 4d	2453 2524	251 256	2704 2780	3956 4041	Sta. Wag., 4d Super Chief	2637	261	2898	3835
Windser Sedan, 4d	2811	222	3033	3995	Sport Sedan Belvedere V8	2214	178	2392	3480	Conv. Coupe Est. Wagon	2716 2772	271 275	2987 3047	4082 4292	Sedan, 4d Catal. Coupe	2420 2486	244 249	2664 2735	3588
Hardtop, 2d Hardtop, 4d	2871	227	3098 3162	3925 4030	Club Sedan	2164	175	2339	3340 3475	Riv. Est. Wag.	2884	283	3167	4309	Catal. Sedan Sta. Wag., 4d.	2540 2752	253 269	2793 3021	3640 3765
Twn. & Ctry Saratoga	3264	256	3520	4210	Sedan, 4d Sport Coupe	2207	178	2385	3415	Sedan, 4d Riviera, 2d	2932 2988	302 304	3234 3270	4137 4081	Star Chief Sedan, 4d	2583	256	2839	3630
Sedan, 4d Hardtop, 2d	3392 3426	266 268	3858 3694	4165 4075	Sport Sedan Conv. Coupe	2308 2419	186 194	2494 2613	3505 3565	Riviera, 4d Conv. Coupe	3044 3271	310	3354 3598	4163 4234	Cust. Sed., 4d. Cust, Cat. Cpe.	2636 2640	260 261	2896 2901	3636
Hardtop, 4d New Yorker	3498	274	3772	4195	Suburban V8 Deluxe, 2d	2228	179	2405	3685 3755	Riv. Est. Wag Super 50	3372	334	3706	4423	Cust. Cat. Sed. Conv. Coupe	2709 2830	266 275	2975 3105	3710
Sedan, 4d	3809 3836	299 301	4137	4315 4220	Custom, 2d	2328 2378	187	2515 2589	3840	Riviera, 2d Riviera, 4d	3208 3343	328 338	3536 3681	4271 4356	Sta. Wagon, 2d Sta. Wagon, 4d	3179 3323	302 313	3481 3638	3750
Hardtop, 2d Hardtop, 4d	3889	305	4194	4330	Sport, 4d Fury V8	2497	200	2697	3840	Conv. Coupe Roadmastr. 70	3548	433	3981	4414	Cus. Bon. Cpe.	5318	464	5782	4285
Twn. & Ctry.	4242 4342	331	4573 4681	4365 4490	Sport Coupe	2686	214	2900	3595	Riviera, 2d Riviera, 2d, A	3578 3578	386 386	3944 3944	4374 4374	STUDE PAC	K. C	ORP		
300C Hardtop, 2d	4513	351	4364	4235	CONTINENTAL	OR C	0.			Riviera, 4d Riviera, 4d, A	3680 3680	373 373	4053 4053	4469 4469	PACKARD Sedan, 4d	2933	1		1570
Conv. Coupe	4913	381	8294	4390	Hardtop	8938	682	9620	4797	Conv. Coupe Riv. Coupe, 2d	3692 3978	374 395	4066	4600 4427	Sta. Wag., 4d	3093			3660
DE SOTO					FORD* Custom V8					Riv. Sedan, 4d	4080	403	4483	4539	STUDEBAKER Scotsman				
Firesweep Sedan, 4d	2629	203	2732	3675	Bus. Tudor	1807		*****	3276 3319	CADILLAC					Sedan, 2d			1776 1826	2680 2725
Sportsman, 2d Sportsman, 4d	2583 2654	208 213	2791 2867	3645 3720	Forder 200 Mg	1911		*****	3267	Series 62	4008			4565	Sedan, 4d Sta. Wagon			1995	2875
Sta. Wagen, 2s. Sta. Wagen, 3s	2893 3024	231 241	3124 3265	3965 3970	Cust, 300 V8 Tudor	2018		ivenue	3269	Sedan	4225 4372			4595	Cus. Sedan, 2d	1823	178	2001	275
Firedome Sedan, 4d	2692	216	2908	3955	Fairlane V8	2065		*****	3334	Sedan de Ville	4685 4815			4620 4655	Cua. Sedan, 4d DeL. Sedan, 2d.	1936	187	2049 2123	2780
Sportsman, 2d . Sportsman, 4d .	2810 2863	225	3035 3092	3910 3960	Club Sedan, 2d Town Sedan, 4d	2185			3392 3437	Convertible Eldo. Seville	4850 6711			4730 4810	DeL. Sedan, 4d. Commander	1981	190	2171	2810
Conv. Coupe	3067	244	3311	4065	Victoria, 2d Victoria, 4d	2191 2252			3427	Eldo, Biarritz Series 60	6711			4930	Cus. Sedan, 2d Cus. Sedan, 4d	1931	193	2124 2173	3071
Sedan, 4d	3179 3207	253 262	3432 3559	4025 4000	Friane 500 V8 Club Sedan, 2d	2181			3407	Special Sedan Series 75	5124			4755	DeL. Sedan, 2d. DeL. Sedan, 4d.	2044	292 206	2246 2295	3100
Sportsman, 4d Conv. Coupe	3380 3554	266 281	3616 3835	4125 4085	Town Sedan, 4e Victoria, 2d	2228 2234		1 *** ***	3452 3442	Sedan, 8p Limousine	6800 7020			5340 5390	President Sedan, 2d	2147	211	2358	317
Sta. Wagon, 2s. Sta. Wagon, 3s.	3639	288 298	3927 4069	4290 4250	Victoria, 4d Sunliner	2295 2389	103.00		3487 3597	CHEVROLET*					Sedan, 4d Classic, 4d	2193 2314	214 225	2407 2539	3208
Adventurer Sedan, 2d	3653	289	3942	4040	Sta. Wags. V8 Ranch	2199	-111		3520	One-Fifty V8 Utility Sedan	1799	186	1985	3199	Hawk Silver Coupe	1954	188	2142	279
Convertible	3909	308	4217	4235	Del Rio	2289 2339		+ 4 + + 4 +	3527 3590	Sedan, 2d Sedan, 4d	1902 1950	194 198	2096 2148	3238 3281	Silver Coupe Golden Hdtop.	2059 2912	204 270	2263 3182	318
DODGE					Ctry. Sed., 6p Ctry. Sed., 9p Ctry. Squire	2437 2556		*****	3679 3693	Sta. Wag., 2d Two-Ten V8	2191	216	2407	3406	Sta. Wagons Pulham	2176	206	2382	3011
Coronet 6	2162	173	2335	3400	Thunderbird-8	3000			3134	Sedan, 2d Delray Coupe	2019 2056	263 206	2222 2262	3253 3267	Parkview	2284 2336	221 225	2505 2561	3310
Club Sedan Sedan, 4d	2237	179	2416	3470	Hardtop	3158			3299	Sedan, 4d	2067	207	2274	3300	Broadmoor	2433	233	2666	341

^{*} Prices of 6 cyl. models are \$83 less than 8 cyl. models.

Prices of 6 cyl. models are \$100 less than 8 cyl. models.



GET SET FOR FALL, WITH HOLLINGSHEAD'S COMPLETE LINE OF QUALITY AUTOMOTIVE CHEMICALS

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MOTOR RYTHM—the original tune-up formula

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CANNON DELRAY BLANKET A fine blend of rayon, nylon, cotton and orlon—combines light weight with extra snugness, warmth and durability. Washable, mothproof, packed in a dustproof plastic bag. Full double-bed size —72" x 90"; gorgeous light gold color.

SET OF 3 UTICA KNIVES Three sturdy, stylish knives—one for shop, one for pocket, and one for outdoors. Work and pocket knives have polished steel blades that hold keen edges; brass lining and natural grip stag handles. 9" heavy-duty Sportsman knife has tempered carbon steel blade with steel guard, stag handle and leather sheath.



BIG COOLING SYSTEM PROFITMAKERS FOR FALL CHANGEOVER



RUSTOP. . . cooling system rust inhibitor and water pump lubricant



KLEEN-FLUSH . . . rapid heavy-duty acid type cleaner and conditioner



KLEAR-FLO FLUSH . . . fast, economical liquid type cleaner



INSTANT SEALER . . . fastacting heavy-duty liquid radiator leak sealer



METAL-SEAL . . . extremeduty non-clogging block and radiator sealer

R. M. HOLLINGSHEAD CORP., Camden, N.J.

25 por the Kink of the Month

TIME AND WORK SAVING IDEAS ON CARS AND

SHOP KINKS

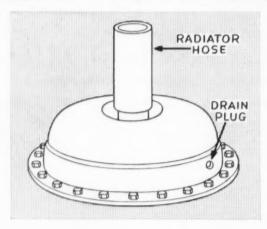
TRUCKS CAN PAY OFF. SEND YOURS IN NOW!

\$50 7.50 FOR EACH KINK PAID

Air Pressure Uncovers Leaky Torque Converters

\$25

KINK OF THE MONTH



We have had trouble with oil leaking at the front on ultramatic transmissions, I figured out a method to check the trouble. After replacing the seal I set the converter on the bench with the converter shaft up. Then I take a 12-inch length of 2-inch radiator hose and slip it down over the converter shaft. I then fill the dish part of the converter with kerosene, also wetting around the converter gasket. I remove one of the drain plugs and holding my hand over the radiator hose I take an air hose and put pressure to the converter through the drain hole. Any air bubbles showing through this test indicates a faulty converter. This will work on all Packard converters. I have found more trouble with the converter leaking than the fit oil seal. Clyde Clements, Service Manager, Hudson Packard, Ridley Motor Co., Okmulgee, Okla.

Easy Way to Remove Muffler & Tail Pipe

Sometimes after you have all the muffler and tail pipe clamps removed it is still quite a job to remove them without heat. We have found a quick and easy way to remove them without heat or extra tools. Most shops keep hydraulic brake flushing fluid or denatured alcohol on hand. Squirt some flushing fluid or denatured alcohol around the muffler inlet and the muffler outlet. Then leave it set awhile. Then work your tail pipe back and forth and remove, likewise do the same with the muffler and remove them easily. Of course the tail pipe and muffler should be cool. Melvin L. Sutter. Haupt'i Pontiac Co., Downs, Kan.

Stopping Noise in Front Suspension Ball Joints

On 1955 and later Ford and Mercury front suspension ball joints that have an annoying creaking noise or sound as if they are dry and need greasing even though they may have been just lubricated. Some are quiet during wet weather. You can stop them from creaking by greasing with a graphite pressure gun grease. Use enough of the graphite grease to force as much of the old out of the ball joints as possible then drive the

(Continued on page 70)



Full Power Feeling with

Nobody likes to drive a car with a sluggish, unresponsive engine that feels only "half-there." But everybody likes the full-power feeling they get when an overhauled engine includes PC 2-in-1 Chrome piston rings!

You're sure of satisfied customers and protection against come-backs when you install Perfect Circles. Here's why: PC 2-in-1 Chrome piston rings are designed and engineered for modern high-compression engines. Important, too, they are plated with thick, wear-resisting solid chrome that more than doubles the life of cylinders, pistons and rings.

For longer life, sustained power with lasting oil economy, and lasting customer satisfaction—install PC 2-in-1 Chrome sets in all your overhaul jobs! Perfect Circle Corporation, Hagerstown, Indiana; The Perfect Circle Co., Ltd., 888 Don Mills Road, Don Mills, Ontario.



PERFECT

2-IN-1 CHROME PISTON RINGS

double the life of cylinders, pistons and rings!

DON'T MISS YOUR DOCTOR OF MOTORS CLINIC!

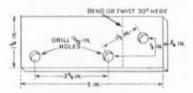
Sponsored by your PC Jobber, the Doctor of Motors Clinic is packed with facts of great value to you. Plan to attend the next one. car a few miles over a rough road. This is much quicker and cheaper than replacing the ball joints. Freeman Petersen, Box 109, Gordon, Neb.

Fast Way to Remove Motor from Dodge Truck

A fast way to remove a motor from Dodge trucks 11/2 ton to 2 ton 6-cylinder engines is to disconnect the flywheel housing from motor block and disconnect flywheel from crankshaft. The nuts are on the front side. It can be done without removing the clutch. That will leave the housing transmission setting in the frame. The flywheel bolts will not slide back in the clutch when you bolt it back in. It takes a lot of time to take the pedals off and the bolts that bolt to the motor supports. When you install a new motor you take all this off anyway, after you take it out. Archie Trail, c/o Bushong Motor Co., Pulaski, Va.

1950 Powerglide Mounting Fits 1952 Models

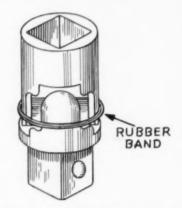
Occasionally when a '52 to '54 Powerglide Chevrolet gets bumped hard in the rear it breaks out the transmission mount bolt holes. There is a place on the transmission case for the '50 to '51 mount. We make brackets and bolt them



to the cross member. We bolt the older model transmission mount to the transmission case and then fasten the mount to the brackets with 3/8 inch bolts, nuts and lock washers. It may be necessary to add a washer or two between brackets and the mounts to obtain the right clearance. This makes a good permanent repair and saves the cost of a new transmission case and the labor to install it. Dale Grayson, Braham, Minn.

Rubber Band Holds Universal in Position

Instead of replacing the universal joint which has lost its



tension and won't stay in the position when you desire to remove or install a bolt in a difficult location, just take a rubber band and wrap it a few times around the joint (about midway down) and you will find out that the joint will stay in any position you want. One rubber band will be good for the installation of a few bolts. Vincent Galloni c/o Lincoln Garage, Chambers St. & Morris Ave., Trenton, N. J.

Handy Tool for Removing Brake Shoe Springs

I have a tool for removing the cups from the spring on backing plates to brake shoe pins such as



used on Fords, Buicks and some Chevrolets. I took an old pair of pliers and, directly on the end, welded a $\frac{3}{8}$ x 1 inch pipe nipple. I then, after cooling, tapped a 7/16 U.S.S. thread in the open end. I split the pipe with a hacksaw, length-wise and straightened with pliers jaw. I ground off about $\frac{1}{8}$ inch on all 4 edges of pipe nipple so I could see better when flat on pin was alined with cup slot. In use it is used with jaws of pliers expanded. Roy J. Cross, McConnell, Ill.

Making a Tram Rod From a Radio Antenna

If ever you are in need of a tram rod to measure certain openings such as doors etc. and you do not have one on hand or yours have been broken do the following. Take an old car radio antenna and pinch the joints a little tighter so the rod will telescope and hold its position. Julius Persyn, Persyn's Collision & Alignment Shop, Throop St., Palmyra, N. Y.

If you have an original idea for a special tool, a short cut on a job or any trick of value to others, write it down and if necessary make a rough sketch. Just make it clear. Send it to Motor Age. If your Kink is used it may bring you \$7.50 or \$25. All entries become the property of the Chilton Company. Because of the quantity of entries sent in, none can be returned.

1957 Tune-up—Alignment Specifications

	ENGIN	TUNE-UP DATA								FRONT END ALIGNMENT					
						IGNITION									
MAKE AND MODEL	No. of Cylinders Bere and Stroke (in.)	to H.P.	(шш)	Seat Angle		Operating Tappet Clearance		Gap (fn.)	(%)	6 (ln.)	Tim- ing	Incination (Deg.	Caster	Camber	Toe-In
		Maximum Brake	Spark Plug Make and Size	Injet Deg.)	Exhaust (Deg.)	(in.)	Exhaunt (In.)	Breaker Point	Cam Angle (D	Cam Angle (Deg. Spark Plug Gap	Spark Occurs T. C.	King Pin Inclin	(Deg.)	(Deg.)	(In _c)
AMERICAN MOTORS CORP.															
Hudson 8-35780	8-4x3½	255	CA-14	30	45	Hyd	Hyd	.016	30	.035	58	834	0 to 34P	NAN to NP	A to A
Metropolitan 4-561, 562	4-23/sx33/s	52	Ch-14	45	45	.015HC	.015HC	.018	30	.024	118	63-9	2P to 3P	36P to 136P	0 to A
Nash 8-5780	8-4x3½	255	CA-14	30	45	Hyd	Hyd	.018	30	.035	58	836	0 to 35P	14N to 14P	A to A
Rambier 6-5710	6-31(x4)4	125	CA-14	45	45	.012H	.016H	.016	32	.035	TC	6"11"	0 to 15P	14N to 14P	A to A
8-5720 8-5730	8-354x354 8-4x354	190 255	CA-14 CA-14	30	45 45	.012H .012H	.014H .014H	.016 .016	30	.035	5B 5B	6"11"	0 to 15P 0 to 15P	N to LP	A to A
CHRYSLER CORP.															
Chrysler 8-C-75-1	8-311x356	285	AL-14	45	45	Hyd	Hyd	.017	31	.035	68	635	0 to 154N	0 to 54P1	A to A
8-C-75-2 8-C-76 8-C-76-300	8-3 {x3 ₁ 8-4x3 ₁ 8-4x3 ₁	295 325	AL-14 AL-14	45 45	45	Hyd	Hyd	.017	38	.035	68 68	63-9	0 to 11/2P 0 to 11/2P	6 to 1 ₂ P1 0 to 1 ₂ P1	0 to 0
		375	AL-14	45	45	.015H	.024H	.017	38	.035	48	63/2	0 to 132N	0 to 12P1	is to is
De Soto 8-S-27	8 3 x3	245 270 295	AL-14 AL-14	45 45 45	45 45	Hyd	Hyd	.017	31	.035	6B 6B	63.9	0 to 155N 0 to 155N	0 to 35P1	A to A
8-S-26 8-S-26 Adventurer	8-3 x3 8-3 x3	343	AL-14 AL-14	45	45	Hyd	Hyd	.017	31 38	.035	6B	634	0 to 114N 6 to 114N	0 to 35P1 0 to 35P1	A to A A to A
Dodge 6-D-71, D-72	6-31/4×45/	138 245	AL-14 AL-14	45 45	45 45	.010H	.01014	.020	39	.035	TC	634	0 to 154N	0 to 35P1	ó to ó
8-D-66, D-67-1 D-70, D-71 8-D-67-2	8 3 x3 x3	260	AL-14	45	45	Hyd Hyd	Hyd	.017	31	.035	6B 6B	63-9	0 to 15 ₂ N 0 to 13 ₂ N	0 to LaPi 0 to LaPi	A to A
8-D-500-1	8-3 {x35 i	340	AL-14	45	45	.C15H	.02414	.017	38	.035	68	634	C to 135N	0 to 35P1	U to U
Imperial	8-4x3[]	325	AL-14	45	45	Hyd	Hyd	.017	31	.035	68	63/4	0 to 156P	0 to 3/pP1	Alek
Plymouth 8-P-30 8-P-31-2, P-31-2, P-31-3 8-P-31 Fury	6 31 x41 8 31 x31 8 31 x31 8 31 x3 A	132 197 215 290	AL-14 AL-14 AL-14 AL-14	45 45 45 45	45 45 45 45	.010H H800. H800.	.01004 .01804 .01804 .01804	.020 .017 .017 .017	39 31 31 38	.035 .035 .035 .035	4B 8B 8B	63/5 63/5 63/5	0 to 135N 0 to 135N 0 to 135N 0 to 135N	0 to \$4P1 0 to \$4P1 0 to \$4P1 0 to \$4P1	6 to 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6
FORD MOTOR CO.															
Continental	8-4x3}}	300	Ch-18	4534	4536	Hyd	Hyd	.015	27	.034	58	736	54P to 154P	0 to 5/P	A to A
	8 4Ax336	363	-18	10/1	10/8	,					-				22 10 23
Edsel* Flanger, Pacer Gorsair, Gitation	8-411x311	348	-18			-						-	OTHOROGO	1-1-1-1-1	1111111
Ford 6-57A, B; 58A, B; 73A, B 8-73A, B 8-57A, B; 58A, B 8-40A, B	6 3 x3; 8 3 x3; 8 3 x3; 8 3 x3;	144 190 206 212	Ch-18 Ch-18 Ch-18 Ch-18	453-9 453-9 453-9	453-5 453-5 453-5	.019H .019H .019H	.019H .019H .019H	.025 .015 .015	37 27 27 27	.034 .034 .034 .034	48 38 38 38	7°1′ 7°1′ 7°1′ 7°7′	SoP to 1SoP SoP to 1SoP SoP to 1SoP SoP to 1SoP	0 to 13/P 0 to 13/P 0 to 13/P 3/P to 15/P	点 to 50 点 to 50 点 to 50
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	8-4x3()	300	Ch-18	4535	4535	Hyd	Hyd	.015	27	.034	58	7"12"14"	0 to 35N	0 to 34P	A to A
Mercury 8-57A, B; 58A, B	8-3(1x3/	255	Ch-18	451-5	4834	.01914	.019H	.015	27	.034	38	7	0 to 135N	0 to %P	A to A
8-75A	8-4x3[]	290	Ch-18	45)-2	451-2	Hyd	Hyd	.015	27	.034	38	7	0 to 11/2N	0 to 54P	is to it
GENERAL MOTORS CORP.															
Buick 8-40	8-410x3() 8-410x3()	250 300	AC-14 AC-14	45 45	45 45	Hyd Hyd	Hyd Hyd	.015	21 21	.033	58 58	7"8214" 7"8214"	154N 154N	34P	A to be
8-50, 00, 70 Cadillac 8-80, 62, 75	8-4x356	3002		45	44	Hyd	Hyd	.019	31	.035	58	4	34N to 154N	56N to 56P	A 10 A
Chevrolet 6-1500, 2100, 2400	6-3 /4 x3 (4	140	AC-14	31	46	Hyd	Hyd	.019	32	.038	TC	4	36P to 136P	0 to 1P	14 to 3
8-1500, 2100, 2400 8-1500, 2100, 2400 8-2934	8-31/x3 8-31/x3 8-31/x3	162 185 220	AG-14 AG-14 AG-14	45 45 45	45 45 45	Hyd Hyd Hyd	Hyd Hyd Hyd	.019 .019 .018	30 30 29	.036 .036 .036	48 48 48		14P to 114P 14P to 114P 0 to 1P	0 to 1P 0 to 1P 0 to 1P	to to
Oldsmobile 8-88, Super 88, 98	8-4x3{}	277	AG-14	45	45	Hyd	Hyd	.016	36	.030	58	7	0 to 54P	SQN to SQP	à to 5
Pontiac 8-57-27 Chieftain 8-57-27 Super Chief, Star Chief; 57-20	8-3 x3 8-3 x3	227 244	AG-14 AG-14	30 30	45 45	Hyd Hyd	Hyd Hyd	.016 .016	30 30	.036 .036	6B 6B	156 155	34N to 134N 34N to 134N	0 to 1P 0 to 1P	0 to A
STUDEBAKER-PACKARD CORP.															
Packard 8-87L	8-3/4x3%	278	Ch-14	45	45	.024H	.02414	.016	31	.036	48		1N to 254N	0 to 1P	A 10 5
Studebaker 6-57G	6-3x454	101	Ch-14	45	45	.016C	.016C	.029	39	.031	28		1N to 256N	0 to 1P	A to 5
8-57B 8-57H 8-57H Golden Hawk	8-3 /4 x 3 1 / 8-3 /4 x 3 1 / 8-3 /4 x 3 1 /	180 210 275	Ch-14 Ch-14 Ch-14	45 45 45	45 45 45	.024H .024H .024H	.024H .024H .024H	.016 .016 .018	31 31	.036 .036 .038	46 48 48	6 6	1N to 21-2N 1N to 21-2N 1N to 21-2N	0 to 1P 0 to 1P 0 to 1P	点 to 3 点 to 3

* 1958 production model.

1 Lett only: right, §4N to §4P.

2 Eldorado models, 325.

G—Cold.

G—Cold.

CA—Champion or Auto-Lite.

6-Cold.

CA-Champion or Auto-Lite.

Ch-Champion Spark Plug Co.

H Hot.
HC Hot or cold.
Hyd Hydraulic valve lifters.

N-Negative. P-Positive. TC-Top center.



Members and guests attending the annual state convention of the Independent Garage Owners of Kansas, July, 1957, are pictured in photo at left. Front row reading from left to right: H. Stiles, president Wichita chapter; Ralph James, Tulsa, Oklahoma, Executive Director of Independent Garage Owners of America; Vinc Sitter, State Treasurer; Art Kittell, State President; Les Wilhelm, State Vice-President; Al Greiving, State Secretary, Art Buckley, president Pittsburg chapter.

\$3,969
IN ONE
MONTH



REPAIRING RADIATORS!

"My INLAND Radiator Department brought in an additional \$3,969 in a single month!" says Bob Neyland, Neyland's Paint & Body Works, Baton Rouge, La.

\$10,000 to \$20,000 a year additional volume is common! "\$16,750 in one year"—McRill's Auto Repair and Radiator Service, Twin Falls, Idaho. "\$18,000 in one year!"—Clough Auto Parts, Storm Lake, Iowa. Radiator servicing brings more profit per sq. ft. than any other activity in the service area!

20 to 30 Million Radiators Need Servicing Yearly! Tests prove 83% of all radiators over a year old are partly plugged. Inland equipment demonstrates need for radiator-cleaning—is designed for fast easy production methods—stays neat and clean.

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8Y	TITLE
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ON THE GO WITH ERVICE

Kansas Convention

IGO of Kansas held its annual state convention recently. Place was Pittsburg, Kansas. Guest speaker was Charles Webb of Standard Motor Products.

Officers for the coming year elected by the Kansas delegates were: Art Kittell, president; Les Welhelm, vice - president; Al Greving, secretary and Vince Setter, treasurer.

New Tulsa Address

Independent Garage Owners of America has moved its headquarters office in Tulsa from East 40th St. to Sixth Street & South Boulder Avenue.

Complete address now is: IGO of America, Inc., Court Arcade Building (Room 344), 6th St. & South Boulder Ave., Tulsa 3, Oklahoma. Telephone: LUther 4-3798.

J. D. Birdseye

Mr. J. D. "Jess" Birdseye died on July 10 of a heart attack. Executive secretary of the Minnesota chapter of IGO, Mr. Birdseye had just recently completed the setting up of a new IGO unit in Minneapolis.



A revolutionary, amazing, miracle ingredient

BONF*

- Catalizes ampere seaimentation
- Banishes intercell bacteria
- Unleashes voltage adhesion
- Dissolves spent molecules
- Inhibits ionic pentameter
- · Wets dry batteries . . . dries wet batteries
- Joins split atoms**

If this sounds fantastic to you, don't worry. It is!

But look at it this way—if a miracle product like BONF is ever discovered, you can bet we'll do the discovering. Our long list of "firsts" reads like a history of the battery business. We hold over 200 current patents covering battery materials, design and processes.

This means you can assure your customers more months and miles of troublefree battery service . . . by selling them Exide batteries.

* Beryloxynitroferricin

* * and infinitives



EXIDE AUTOMOTIVE DIVISION, THE ELECTRIC STORAGE BATTERY CO.
P. O. Box 6266, Cleveland 1, Ohio



productive pair. 3-FOR-ALL VOLTAGE REGULATOR KITS Your sales and profits multiply fast with 3-FOR-ALL Voltage Regulator Kits! It takes only a limited stock of these precision engineered 6v. and 12v. Regulators to service practically every car and light truck on the road today. The millions of American Bosch Regulators in use as original equipment assure a continuing replacement market for you. And ... they're competitively priced for profitable replacement service sales. 3-FOR-ALL Kits are small and compact; make stocking easier, selling quicker. Each Kit has just three 6v. or 12v. Regulators, to cover the widest range of applications. ORDER both, STOCK both, DISPLAY both for more profits with minimum inventory. Call your supplier,

"Productive Pair" Counter Merchandiser assembles easily and quickly with two of the famous 3-FOR-ALL Kits. Maximum display with minimum stock for most 6v. and 12v. electrical system requirements.



TODAY! American Bosch, Springfield 7, Mass. A Division of American Bosch Arma Corp.

AMERICAN BOSCH











Awards Presented Top Auto Students

In a ceremony held in Brooklyn, N. Y. recently, Anthony J. Abatemarco, president of the Automobile Repairmen's Association, and Jerry Sica, a member of the association's "Youth Activities Committee," presented association awards. Awards went to the first three top automotive students from the city's vocational high schools.

Pictured in photo at left are Joseph Tomanelli (far right) of the Gompers Vocational High School with Anthony J. Abatemarco (left) and Jerry Sica (center).

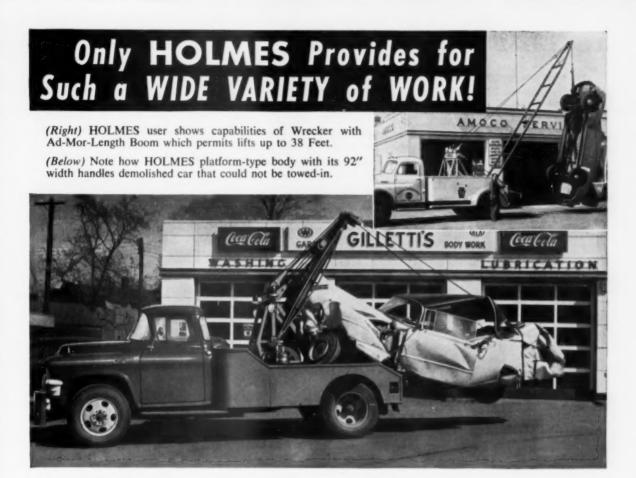
Tomanelli won first place honors in the city-wide automotive contest among students from ten of the vocational schools.

Automotive Education

Auto-Lite Grads Pass 5,000 Mark

More than five thousand automotive servicemen have graduated from The Electric Auto-Lite Company's Technical Specialist Field Training program within the last six months. In addition, 380 instructors have been graduated from the Instructors Field Training program during this same period of time according to Auto-Lite's national service manager F. S. Snead.

The Technical Specialist Field program is operated in cooperation with Auto-Lite Central Distributors and Service Distributors across the country. Course covers the fundamentals of automotive ignition in eight evening classes.



The removal of Wrecked Cars and Trucks from streets and highways is a factor in public safety that calls for Fast, Efficient work . . . with a Wrecker which can be quickly adapted to *any* road emergency.

For more than 42 years HOLMES engineers have specialized in the development of wrecker equipment to meet such requirements. The above illustrations show the results of these efforts with picture proof of the

flexibility to be had in the HOLMES 525 Model, which is regarded as an all-purpose service unit.

HOLMES offers a wide choice of 7 Wrecker Models, all varying in size and capacity. Each built with that standard of working efficiency which has made HOLMES the world's most widely used Wrecker. Write today for details on How a HOLMES Wrecker can make money for you.



The new transmission set-up is comprehensive. First of all. the automatic transmission is supplied as standard equipment on all 124-in. wheelbase models; optional on the others. The synchromesh transmission is standard equipment on all Ranger and Pacer series. In addition, over-

drive is available as optional equipment. This consists of a conventional three-speed transmission with the addition of an automatic planetary gear unit for overdrive. A single-plate, semi-centrifugal type clutch is supplied with the standard and/ or overdrive transmissions.

Among the numerous items of special equipment, Edsel offers a self-contained air conditioning, heating, and defrosting unit controlled by a single rotary dial with a stationary pointer. An electric servo motor is energized by the single control which, in turn, makes all mechanical adjustments over the entire range. A two-speed blower is operated by a toggle switch.

Conscience gets a lot of credit that belongs to cold

Another noteworthy accessory is the automatic rear deck lid opener, electrically-operated by means of a solenoid. The latter is energized by a key-lock protected button on the instrument panel. The deck lid also can be opened from the outside in the usual manner. Still another item is the power seat which is controlled by a single four-way toggle switch located to the left of the instrument cluster.

Edsel cars are equipped with multiple headlights. Outboard lights come on for low beam illumination. All four lamps go on when high beam road lighting is desired. Choice of high or low beam is controlled by a foot switch. Parking lights and turn signals follow the curvature of the grille to provide side visibility in the interest of safety.

"It's no harder than carrying a ten gallon can!"

The reason P&D parts rate highest

P & D's rigid control system starts with the raw material, follows through every step in manufacture to a triple check of the finished product. Result? - Assurance of the Quality you need for high compression engines today!

for instance -COILS

P&D makes the highest tested coil in the American market - by actual laboratory and road tests.

Coil towers of highest dielectric "PLASKON" materials - internal windings assuring greatest output, minimum brake current - insulation of special quality glazed steatite - sleeves of magneto type to insure easy starting, no miss at high speeds - silicon steel balanced for high output and no burn out at low speeds.

In coils - as in all P&D ignition parts this Quality Control all adds up to more satisfied customers - more profit for you.

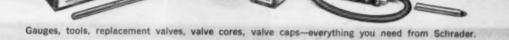


Export Sales: Borg Warner International, 36 So. Webash Ave., Chicago 3, III.

Schrader

is the word for air...in full tubeless tire repair and maintenance service





Tubeless business—changeover, repair, replacement—grows every day as tubeless tires roll up the mileage. Be sure you have complete Schrader service for the quickest, best way to handle this new business. Your Schrader supplier has everything you need to protect your customers and to protect your reputation for handling first quality brand name products. And remember, the valve should be as new as the tire to assure the full mileage built into the tire.



A. SCHRADER'S SON • BROOKLYN 38, N. Y.
Division of Scovill Manufacturing Company, Incorporated

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Training Methods

• Continued from Page 43

moved deliberately and objectively. We have gained enough valuable information and experience to put the school's program in high gear.

N.S.P.A. is in an enviable position to obtain qualified information from all branches of the automotive industry. Member-

ship includes manufacturers, who supply car factories, jobbers, and affiliation with a national service and garage association.

The benefit of this direct, intimate contact with all three phases of industry, together with the consul of educators, labor and parent groups should develop a well-rounded workable program.

Four Major Objectives

1. To promote and encourage auto shop training in all branches of the automotive service industry — including all institutions of learning, both public and private.

2. To work closely with educators, labor and parent groups, to develop and maintain current standards of auto shop instruction that is practical and useful to industry and not of just the "hobby" nature.

3. To promote and encourage young people to seek automotive training. Publicize its advan-

tages through exciting publicity

and guidance.

4. To cultivate individual teacher's interest in our problems and requirements and to make known to them industry's sincere desire to be helpful to them. Honorary membership in local garage and jobber associations made available. Encourage industry to include teachers on technical mailing lists — to receive charts and to attend technical meetings.

A survey was made of schools in several cities. High schools, technical high schools, vocational high schools and trade schools were among those visited. It is planned to visit more schools that are known to be doing a better job, to further give us a complete cross-section picture.

The survey revealed the pattern pretty much the same in all schools visited to date. It was very evident that there is no uniform plan or program. Teachers are almost entirely on their own to develop assignments as they see fit, and teach how, what, and where their interests or hobbies lie.

Shop layouts in many cases were poorly planned to take best advantage of available work (Continued on page 82)

you can BANK on-





Yes, you can bank on Johnson Tappets for ready-made profits. Johnson, as an exclusive tappet manufacturer, has the only complete line of tappets, giving you coverage in both mechanical and hydraulic tappets. The popular Adjustable Tappet for Ford V-8 L-Head engines has been a steady money-maker for many repair shops, and will continue to be for many years to come. Johnson Hydraulic Tappets are filling the needs of a growing market as more and more new cars are being built with hydraulic tappets.

Finally, you can bank on the customer acceptance which Johnson quality has always assured. Johnson Tappets are made under the most effective quality control known. You build a reputation for such high quality when you specify and sell Johnson Tappets—Hydraulic, Adjustable and Mechanical.





TEST 'EM ALL TO MAKE EXTRA ANTI-FREEZE PROFITS!



TELLS exact freezing point
SELLS all anti-freeze!

no need to know what solution you're testing . .

Edelmann No. 909

MAGIC-EYE

The DIRECT-READING INSTRUMENT

Nothing can match its simplicity, speed and accuracy—its exclusive MAGIC-EYE (a precision-molded and polished triple magnifying lens of clear, unbreakable Lucite) makes freezing point figures instantly legible even in poorest lighting conditions.

No waiting for anti-freeze to cool! MAGIC-EYE FREEZ-D-TECTOR tests radiator solutions up to 180°—lets you handle more customers! Yes, it's the world's fastest, most accurate anti-freeze tester! No wonder it's also the world's fastest seller among service operators!

ORDER NOW FROM YOUR EDELMANN JOBBER
—or write direct

E. EDELMANN & CO.

2332 LOGAN BLVD. . CHICAGO 47, ILL.

You have over 400 million to increase your Champion



They're Champion's "4-ways" ads—seen in the last nine months by better than 9 out of 10 car owners

And 7 out of 10 of these car owners need spark plug service right now!

These are your customers. They've been presold with solid facts about the advantages of driving with Champions. Now it's up to you. When these customers roll in for gas or oil, ask if you may check their plugs. Remind them of the "4 good reasons" for using Champions: 1—More Road Horsepower, 2—Quicker Starts, 3—Less Engine Wear, 4—Lower Cost Per Mile.

It takes only a moment to ask . . . only a few minutes to install a complete set of profit-boosting 5-rib Champion Spark Plugs.

Sincerely, Jim L P.S. Monza, Italy, was the scene this June of a grueling international big car race and another Champion triumph. In what some drivers described as the toughest race they'd ever seen, Jimmy Bryan, Troy Ruttman and Johnny Parsons were the first three drivers under the checkered flag. All three drove Champion-equipped, Americanmade cars...more proof that dependable Champions pay off under the most severe conditions.

"salesmen" working Spark Plug sales



Champion advertisements, like the one above at left, will be seen in these leading publications by millions of readers . . . including the majority of your customers.

CHAMPION SPARK PLUG COMPANY



TOLEDO 1, OHIO

space and allow for efficient supervision by the teacher. Shop equipment was inadequate and most present pieces were obsolete and beat-up government surplus. There was a hodgepodge of equipment that didn't even border on uniformity from school to school. The exception here is tune-up, analyzing and test equipment that is modern and kept up to date by the manufacturer. This complete equipment was in all the schools visited.

It was apparent in all schools and classes that emphasis is put on horsepower and motors. I had the feeling that wheel alignment, steering and brakes were short-circuited in favor of squeezing out every bit of horsepower with very little regard for controlling it with the safety operations that rank high in job orders written in actual shop practice. Tune-up equipment and practice motors were plentiful. Very little equipment or mock up and units for brake service, steering and alignment. In all the schools, to my knowledge, there was not one power steering unit or power brake unit. From a safety standpoint and actual shop experience on job orders written these services should be emphasized.

Chassis, motors, carburetors, brakes and generators, were obsolete in all classrooms. It is hard to hold a student's interest and create exciting assignment when working on this passé junk.

It is notable to mention that in other industry shops it seems to be quite the opposite. Machine shops appear well-organized, well-planned and well-equipped. Supplies, such as raw material for machine work is in abundance. Every student has a definite assignment and is turning out a job. The same holds true in welding shop and tin shop.

The aircraft shops were wellequipped and organized, with closer supervision of smaller classes by more than one instructor. We were told the reason for this was because of government requirements. I am not an advocate of government regulations, but point this up only to stress that it can be done properly with outside help and recommendations to develop standards and procedure.

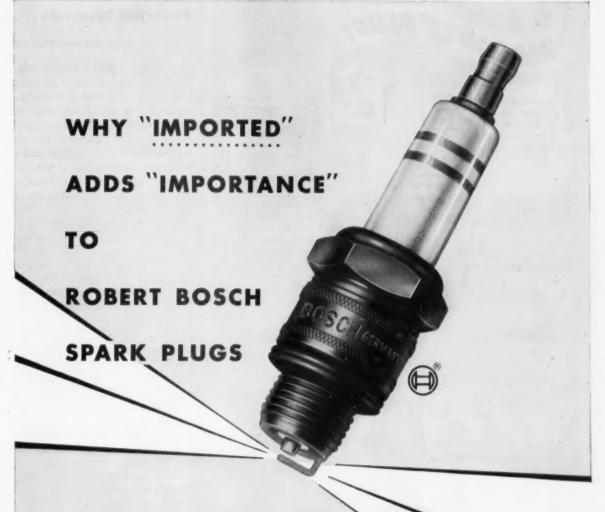
Work card assignments are obsolete, poorly planned, and vary from school to school and city to city. Some exceptions we take are as follows:

There is no reference to torque (Continued on page 84)



AMMCO TOOLS, INC., North Chicago, Ill.

for tightening nuts or bolts in inaccessible places.



The prestige of European automotive products has a market value you can capitalize by distributing Robert Bosch Spark Plugs

- standard equipment on leading European cars, buses, trucks, marine engines.
- used by the winners in most of the important international automobile races.

Priced to meet competition, Robert Bosch Plugs give you full profit on every sale. A complete range of types is available to suit all engines.

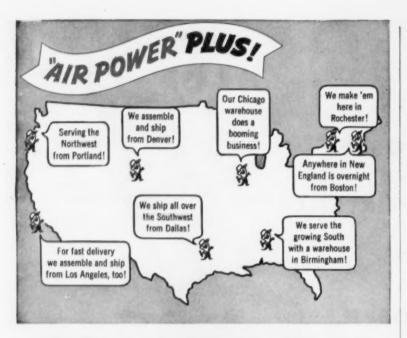
Write for full information about Robert Bosch Spark Plugs, Ignition Coils, Voltage Regulators, Stark-Tone Horns.

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40-25 Crescent St. Long Island City 1, N.Y.

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Compressors when you want 'em!

Yes, you get compressors when you want 'em... when you specify Kellogg-American! That's because there's a Kellogg-American factory assembly plant or warehouse near you—no matter where you're located.

This means that Kellogg-American jobbers have a back-up stock—they can deliver compressors anywhere in the country exactly when they're wanted and needed!



WAREHOUSE LOCATIONS

Birmingham, Ala. Boston, Mass. Chicago, III. Dallas, Tex. Denver, Colo. Los Angeles, Calif. Portland, Ore. Rochester, N. Y.

Brake Shoe

KELLOGG DIVISION ROCHESTER, N. Y.

Kellogg-American

Training Methods . . .

Continued from Page 82

wrench as on cylinder head jobs. Too much time is spent on gear ratios Numbered wrenches which have not been used in thirty years, still appear on work cards. Fractional sizes are marked now Adjust hand brake on cars having hydraulic service brake. All cars manufactured in the last twenty years have hydraulic service brakes Remove and re-install and check lever type shock to manufacturers specifications — obsolete Wash and polish car with wax. A Sunday morning job. Install hot water heater. Passé Install radiator core in old tank, which is now a specialty job Lubricate springs and install covers. Obsolete with modern springs.

It is not clear, because of overlapping services, just what the objectives are in some of the schools surveyed. It must be agreed that, for example, in Semester 1-care of car finish and making a woodruff key are not exactly Siamese twins. That removing and rebuilding and replacing a spring is not related to splicing wires in Semester 2. Why check transmission and differential lube in second when a chassis was lubricated to specifications in first. An oil filter was replaced in the first: which means engine lubricant would be automatically checked at that

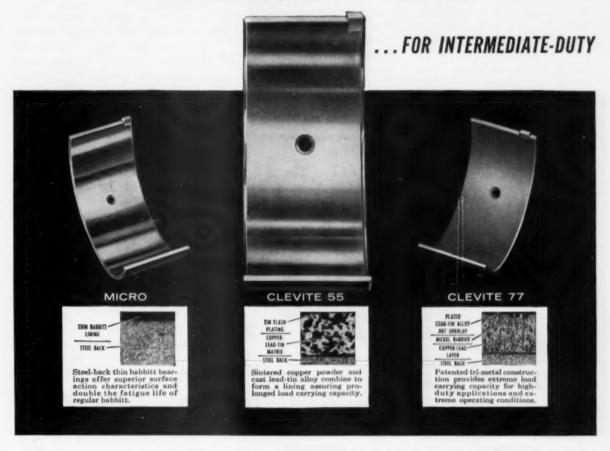
(Continued on page 86)

Classified Advertisements

HAVING COLLECTION TROUBLES?
OUR PAYMENT-PRODUCING COLLECTION AIDS BRING CASH IN FAST!
SAMPLE ASSORTMENT FREE—IF REQUESTED ON COMPANY LETTERHEAD. ASSOCIATES, BOX 153, GREEN
BAY, WISCONSIN.

OFFERING DISTRIBUTORS QUALITY AND COMPETITIVELY-PRICED IGNITION PARTS LINE, COPPER TUBING, AND OTHER EUROPEAN AUTOMOTIVE PARTS LINES FOR AMERICAN, EUROPEAN CARS, TRUCKS. BOX 6, MOTOR AGE, 5601 CHESTNUT ST., PHILADELPHIA 39, PA.

REWARD—\$25 to first person tells me where can buy unused left front fender for 1942 Buick Century. Part No. 8.130— 1327345. Also fits 42-90 series. Harvey Eaton, Route One, Skowhegan, Maine. **ANNOUNCING**



Offering the right bearing for each application

RELATIVE LOAD CARRYING CAPACITY MICRO CLEVITE 66

FThe words Missionath, Clavits and Mirry are

registered trade marks of Clevite Corporation.

Clevite 77* for high-duty. Micro* for regularduty. And now the new Clevite 55* for intermediate duty. Each bearing designed and developed to meet a specific need . . . all offering improved engine performance, less down time and lower maintenance costs.

Find out for yourself. See your nearby N.A.P.A. jobber today. He offers fast service on the complete Monmouth* bearing line.





CLEVITE SERVICE



Training Methods

Continued from Page 84

time. Why repeat in the second? In Semester 2, refill shock absorbers—by the time a boy gets out of school he will never see the type shock that needs refilling. The same holds true with rebuilding a clutch. In shop practice, clutch covers are replaced on an exchange basis.

The valve services are covered thoroughly, but no mention of hydraulic lifters that have been in high production for eight years. It is questioned if radio service belongs next to making a bushing, or if repair and painting a fender fits next to Diesel principles.

Not being an expert on guidance or education, I assume that there are many good reasons for a lot of these things that I take exception to. But, from a practical man's standpoint, it looks like we are building student frustration rather than a finished product in one or more areas of this business. It may be that the answer is in more carefully breaking down categories; i.e., service station, radiator service, glass shop, welding shop, body and paint, electrical and tune-up, wheel alignment and brakes, and jobber machine shop service. All of these services are required by both independents and car dealers. If a boy is a specialist in one or more categories, he, at least, is in a position to produce at a profit in those jobs, with the resulting upgrade of pay, while absorbing more thoroughly the other services later.

Student Employees

Through the years we have employed many auto shop students-on a part-time basis. At present we employ three auto shop graduates. Two of these boys worked for us after school, one has been with us for seventeen years. When this young man graduated from his vocational school he knew where he was going and how to get there. He was learning his auto mechanic's trade. When this young man got married and had a family he was supporting his children on mechanic's wagesnot apprentice wages, supplemented by handouts from his folks. His job is steady and secure. Because of the highly technical nature of his work and the acute mechanic shortage, the dignity of his trade and wages are constantly being up-graded.

1. We need a uniform up-todate program of specific assignments in proper sequence and endorsed by educators, industry,

(Continued on page 88)





CUSTOMERS LOVE YOU WHEN YOU REPLACE WITH AMERICA'S BEST-KNOWN BEARING...JUST TELL 'EM IT'S...



See the first Timken Televent hour, in color, "Eleven against the Ice - story of the Antarctica Turnpike". NBC-TV, Monday night, Sept. 23rd.

Bearing Company, Canton 6, Ohio. Canadian plant:

St. Thomas, Ontario. Cable: "TIMROSCO".

Training Methods

Continued from Page 86

labor and parent groups. This to be revised each year to keep pace with new models and developments. Sample outline of curriculum will be given later.

2. There should be teacher refresher meetings each year on revisions and directive from top level to permit only those specified assignments. Additional compensation for teachers is a must for attending after-hour meetings.

3. Shop layouts should be revised to complement current plans. Eliminate obsolete junk that students will not see in the field.

4. Review shop equipment and modernize or replace with well chosen items that are practical and useful in shop practice.

5. Chassis, units and motors should be kept up to date.

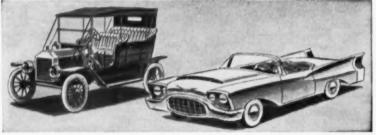
 Clean house of obsolete charts and take advantage of industries modern give-away items.

7. Student objectives should be screened carefully and placed according to specialty desired.

8. Student must requirements should include proper wearing attire for his vocation and a skeleton set of personal basic tools.

9. Step-up guidance and placement program in cooperation with local industry associations. Encourage students to work part time in matching industry with their vocational training to get practical experience.

Car models may change...



but the quickest, most profitable way to bigger service turnover



is always a Harley-Davidson SERVI-CAR



To meet and profit from increasing demands for service without hiring more men, provide Harley-Davidson Servi-Car Service.

With a Servi-Car you keep completed jobs rolling out, new work rolling in. There's no clogging of work areas. And you build goodwill, cover more territory.

Get the facts now. See your Harley-Davidson dealer or write for free book, "It Pays to Give Service." Harley-Davidson Motor Co., Milwaukee 1, Wisconsin. Dpl. MA

Harley-Davidson SERVI-CAR

Future Plans

It is our purpose to conscientiously examine actual shop orders from many parts of the country and from various types of service establishments. We are sure that with this information, a sensible, realistic, and workable plan will be developed that will be acceptable and useful to educators. It is the intention of N.S.P.A. to immediately start work on separate text books for various categories; such as, tune-up, brakes and wheel alignment, and other services in order of their importance to maintenance and safety. Actual student work assignments will be covered together with specific teaching guides on each subject and related services. It is common knowledge that most shop layout plans and equipment recommendations in the past have been too costly, discouraging some communities from teaching auto shop. It is also our plan to come up with a choice of shop layouts that will be financially within reach of any school interested in auto shop training.



New B&D No. 300 Impact Wrench treats trucks like toys!



MORE POWER PER POUND: This light-weight (only 13 lbs.) high torque tool packs a powerful punch! Equal power in both directions.

LONGER LIFE! Torture tests show it has higher performance, cooler running, longer life than com-





EASIER HANDLING: Pistol. grip positioned to eliminate nose or tail heaviness. No starting torque twist. Allposition auxiliary handle.

No. 100 IMPACT WRENCH: Ideal companion to the No. 300 for smaller applications. Both tools in your kit cover most bolt sizes.



See it pour on brute power for yourself . . . mail coupon today!

Stop breaking your back trying to budge stubborn truck lugs! Mail the coupon today for a demonstration of how the new B&D No. 300 Heavy-Duty Impact Wrench brings more than 300 big ft. lbs. of torque to bear-spins rusted, dirt-encrusted lugs out in a breeze!

See why this new tool is really power-built! Patented armature construction; precision machined, heattreated impactor and anvil; heavy-duty ball bearings throughout—this impact wrench is really tough, really durable. And it's fully reversible.

For a free demonstration or additional information mail coupon to: The Black & Decker Mfg. Co., Dept. 5109, Towson 4, Md. (In Canada: P. O. Box 278, Brockville, Ontario).

Leading Distributors Everywhere Sell

AAIL COUPON FOR FREE DEMONSTRATION

THE BLACK &	DECKER	MFG. CO., Dept. 5109,	lewson 4, md.
☐ Please	arrange	a demonstration	of your new N

☐ Send additional information.

300 Impact Wrench.

Name	Title
Company	
City	Zone State



Some spark plugs are designed for low speeds,



Some spark plugs are designed for high speeds, but...

POWER TIP is the first spark plug that "fires up" today's engines at all speeds!



HERE'S WHY...



POWER TIP

POWER TIP is the first spark plug ignition-engineered to fill the need for both hot plug and cold plug performance. Power Tip "fires up" today's overhead-valve engines for peak performance at all speeds. Here's why . . .



POWER TIP checks costly and dangerous high-speed pre-ignition damage often caused when engines equipped with hot spark plugs designed for city driving are operated at high speeds.

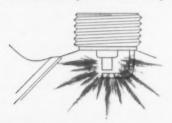
> COOL AIR-FUEL MIXTURE



lost only 6.45%.

POWER TIP electrode alloy outlasts ordinary electrodes 5 to 1? Ordinary electrode alloys burned up when tested with new Power Tip design. In corrosion tests simulating combustion chamber conditions, conventional electrode lost 33% of its original weight. Power Tip electrode





POWER TIP protrudes farther in toward the center of the combustion chamber. Ignition takes place closer to the heart of the air-fuel mixture. Fuel burns more evenly and completely. In many cases, fuel mixture can be made leaner for better economy with no sacrifice in power or performance.

POWER TIP gets hot fast when engine

starts up, stays at best operating temperature to prevent fouling. Protruding tip gets full benefit of scouring action

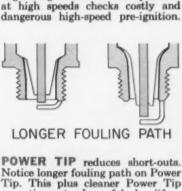
of hot, swirling gases to burn carbon

and oil deposits away clean.

HOT GASES



POWER TIP reduces short-outs. Notice longer fouling path on Power Tip. This plus cleaner Power Tip operation extends useful plug lifemaintains peak performance.



ceramic tip is in just the right position to take advantage of this "re-

frigerating" action. Cooler operation

POWER TIP... the first spark plug ignition-engineered for today's engines and today's driving... delivers peak performance in overhead-valve V-8's and in most overhead-valve 6's in all these cars—BUICK, CADILLAC, CHEVROLET, CHRYSLER, DE SOTO, DODGE, PLYMOUTH, IMPERIAL, HUDSON, FORD, LINCOLN, MERCURY, OLDSMOBILE, RAMBLER, PACKARD, PONTIAC, STUDEBAKER, NASH.





SPARK PLUGS WITH

New Mechanics . . . Continued from Page 42

Right now there are about 775,000 mechanics servicing the 65 million vehicles registered in the United States. That's a ratio of 84 cars per mechanic. To be sure, new service techniques and equipment are constantly increasing the productivity of our mechanics. But

for the

independent

Jobber

who

refuses

offsetting these new methods is the fact that the cars continue to get more complex and more precisely engineered. As a result, we can assume that there will be no significant change in the ratio of cars per mechanic in the years immediately ahead.

Highway officials estimate

that by 1975 we will have nearly 100 million vehicles in this country. This means that eighteen years from now 1,200,-000 mechanics, or 425,000 more than we have now, will be needed to service them.

So somehow we have to find about 23,000 additional mechanics each year for eighteen years to take care of the increased demand. Even that isn't enough. Add to that 23,000, the men to replace those leaving the trade due to death, retirement, promotion, and various other reasons, and we can see that every year approximately 40,000 new mechanics must be added. While accurate figures are not currently available, it appears that less than one-third of this number of men are annually graduating from automotive programs in our vocational schools.

Where these 40,000 men will come from and how they will receive their training is a matter of considerable concern to all of us in the automobile industry. From a broader point of view, it is a matter of concern to the entire nation. Good, efficient service means lower costs to the owners and users of motor vehicles—75 per cent of all families in the United States own and operate passenger cars.

The problem of recruiting and training a growing number of men for the automotive service (Continued on page 94)





STOCK UP ON FAST-MOVING ROCHESTER PARTS AND KITS ... GET THESE HANDY NEW PARTS CABINETS NOW!





Meet Rochester's Big Three. Complete parts kits with all parts and gaskets (flange included). Gasket kits with all the gaskets plus flange. And, flange gaskets in individual envelopes. Order Rochester's fast-moving parts and kits now, and get the story on these new Rochester parts cabinets.

Your Rochester-UMS salesman is now offering four specially selected assortments of carburetor parts and kits to fit your specific needs. These Rochester parts and kits help you tap a market of over 22 million cars, simplify your inventory and speed your repair jobs by giving you just the right parts to do the job.

Call your Rochester-UMS Representative now. Order the assortment of Rochester parts and kits that fits your needs. And ask him about the new Rochester parts cabinets.



Rochester Products Division of General Motors, Rochester, N. Y.

CHESTER

CARBURETORS

SPECIFIED AS ORIGINAL EQUIPMENT ON MORE NEW CARS THAN ANY OTHER CARBURETOR

vocation is one that has had our attention for a number of years. A serious shortage of adequately skilled mechanics has faced the industry for some time and we've spent a lot of time and energy investigating the probem.

For instance, we've asked

ourselves why—why are too many young men ignoring the field of auto mechanics?

We know they believe that auto mechanics lack social status.

They think the work is too difficult and too dirty.

Also they believe it pays less

than many other available jobs. In the main they are misinformed on all three points.

Today's fully qualified automotive mechanic is a technician in the truest sense of the word. If he weren't he couldn't hold his job! Daily he works with electronics, hydraulics and mechanical units that only a few years ago didn't apply to our vehicles. Our mechanic today is a craftsman and can take a craftsman's pride in his work and the contribution he makes to the safe and comfortable transportation of his community.

Dirty? Sure some of his work is dirty. But he'll find the same kind of dirt in thousands of factory and other industrial jobs. But there's something he'll find in automotive service that's a lot more important than dirty hands. I'm talking about opportunity. In relatively small retail operations such as our automotive dealerships he will find excellent opportunity to move up, to increase his expertness, to move into management assignments and, as has happened in numerous cases, to become the owner of his own business. So I say the color of the dirt on our mechanics' hands is goldthe gold of personal opportunity in a business that continues to be one of the fastest growing in America.

I think what I've just said covers the matter of money, also. But, just for the record let me point out that most mechanics get 40 to 50 per cent of the labor charge to the customer and can average from \$70 to \$150 a week. And in many areas where this kind of skill is in short supply, a good man can improve his earnings if he wishes to further apply himself. It's my personal belief that all of us can and should do more to bring that kind of information and thinking to the young people who may be qualified to

(Continued on page 96)



It comes packed right in with popular Murray "Gold Seal" Hose Clamp Selection No. S-150 . . . a complete fall stock.

Adds a new dimension to electric shaving . . . even for men and women who already shave electrically. Powered (get this!) by 3 standard 1½ volt flashlight batteries. This means you can shave fast, comfortably, anywhere, anytime . . . without need for electric outlets . . . car, camp, train, plane . . . even in your own bathtub! Your beard disappears in a jiffy. Operates for months on same set of batteries. Foolproof. Guaranteed. Compact, light, complete in its own beautiful ivory colored case.

It's easy to get your "Town N' Country" Electric Shaver. Just ask your jobber . . , or write us direct for details.





ALUMINUM INDUSTRIES INC., Cincinnati 11, Ohio

original equipment

FMITE

the complete

Parts
moter and chassis line

enter automotive service work. Certainly it would be a step toward solving one aspect of this problem.

Important steps to additional solutions are being taken right now. Eleven years ago members of your (American Vocational) association expressed dissatisfaction with existing automobile mechanics instuction in the vocational schools of the nation. And they did more than talk about it—they did something about it. An automotive mechanics committee was appointed to consult with the automobile industry to see what

might be done to improve the situation.

Out of this initial contact the Automotive Industry-Vocational Education Conference was established, setting into motion one of the finest education-industry cooperative efforts in the United States.

You are familiar with many of the activities of the Conference throughout the years, but now I'd like to report on some of its accomplishments and some of its plans for the future.

Of course, a major work of the Conference was the preparation of a series of suggested standards for automotive service instruction in vocational schools. These standards were developed by committees consisting of leading vocational educators and top automotive service executives. Also, a panel of consultants appointed in every state by state vocational education administrators aided in the development of these standards. These recommendations covered such subjects as recruitment and selection of students, shop layouts, supplies and equipment, course content, cooperative training, summer workshops and college training for automobile mechanics teachers. These standards were first published in 1951. Then, in 1956, the book was revised and brought up to date.

Now let me cover briefly some of the other activities of the Conference:

It arranged with colleges and universities to give degree credit to auto mechanics instructors taking special courses at automotive industry summer workshops and schools maintained by the service industry.

Each year the Conference assists in the establishment of these summer workshops throughout the country for auto mechanics teachers.

Also, arrangements are made for the meetings of auto me-(Continued on page 98)

K-D TOOLS make hard jobs easy

FASTER VALVE TOOL FOR LATE MODELS.

K-D 383 COMPRESSOR

This tool is easier to handle, faster in use because the Operating Handle is located on the back of the frame. Services late model valve-in-heads—GM, Fordbuilt, Chrysler-built, others. Also services many small L-heads if manifold removed. Heavy bar steel, oil tempered adjustable jaws.



After Plunger Bar is set for the first spring, remainder are serviced by opening, closing Handle.

K-D 700 VALVE SPRING LIFTER

K-D 175 UNIVERSAL CYLINDER HEAD HOLDER

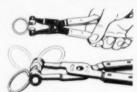
K-D 428 HOSE CLAMP PLIERS



For L-head engines including Ford 6. Easy turning hand wheel, plenty of lift. Replacing valve locks made easy.



Low price! Holds all sizes. Rotates heads in any position for cleaning, servicing valves. Lightweight, compact.



Gets spring wire clamps in or out without struggle! For all sizes, large or small, in any position. Jaws swivel.



FREE CATALOG. Over 150 K-D Tools described and illustrated. Write for your copy,

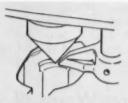
K-D TOOLS

K-D MANUFACTURING CO. LANCASTER, PA.

WEATHERHEAD ROTARY

TUBE FLARING TOOL!

most important advancement in tube working in 20 years!



Automatic tube height gauge to control flaring diameter to S.A.E. Standards. Positions automatically.

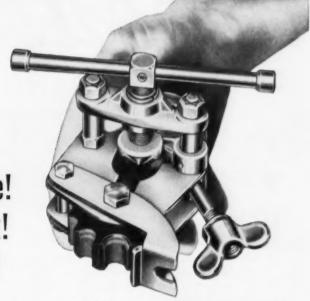


Patented "built-in" rotary clamping dies. Nine popular easy-to-read sizes, 1/4" thru 1/4".

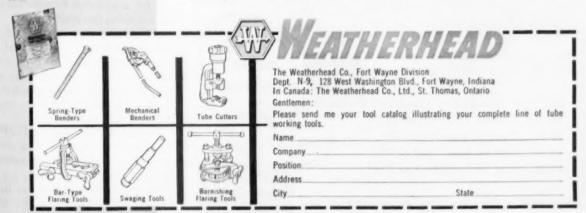


Models also available with automatic burnishing attachment and burnishing cone.

Fast!
Easy!
Accurate!
Compact!
Durable!



Here's a brand new tool for perfect tube flaring . . . unparalleled in performance. It's faster . . . one piece construction. It's easier . . . "Dial-Matic" tube size selection. It's accurate . . . tube stop automatically controls flaring diameter. It's compact . . . for easy storage. It's durable . . . for years of service.



chanics teachers at your annual American Vocational Association convention.

This group has helped further by compiling lists of teaching aids for automotive programs available from the automobile industry.

We've done quite a lot of work

in publishing books and reports on various aspects of vocational training of auto mechanics.

We've tried to encourage other groups and individual automotive concerns to take a more active interest in vocational schools. And, we've enjoyed gratifying success. Currently the Conterence is preparing a complete set of examination questions to match the suggested automotive curriculum.

I'm sure you'll be interested to know that we now have two major projects in the discussion stage. The first involves a program to encourage more men to seek college degrees for career as auto mechanics teachers. The other is the development of criteria by which counseling and guidance people can predict with reasonable accuracy an individual's chances of succeeding as an auto mechanic after the completion of his education in vocational schools.

Next year I hope we'll be able to report that both of these programs are under way.

Device Warns of Rear Horn Blast

A new safety device to let drivers "see" the warning horn blast of a car approaching from the rear has been developed by Ford Motor Company.

It picks up the sound of an approaching horn and flashes a small amber light on the instrument panel to warn that a car wishes to pass.

Ford's electrical engineering department at the Research and Engineering Center made the device because unusual road noises sometimes make it difficult for a motorist to hear horn signals from the rear.

Simple and very compact, the warning signal consists of only three parts—a tiny microphone just above the rear bumper, a midget sized amplifier and a button-type warning light on the inside of the car.

The microphone picks up only horn signals because it is encased in a tube that resonates only at the sound-wave frequencies of horns, and the instrument light flashes on and off only when a horn blows.



Right now in every No. 5203 BONUS-PAK of 100 HY-GEAR "worm-drive" Hose Clamps that you buy you will find a bonus of 10 more popular sized HY-GEAR clamps that cost you nothing! It's a clear, cash-in-the-pocket discount.

No catch, no clinkers . . . Every BONUS-PAK contains only the 4 fastest moving HY-GEAR sizes needed for brisk seasonal sales! Do better than average in a season? Then, get more than one "PAK" and get a bonus in each . . . No better way we know to pack in extra profits!

But hurry! Your jobber can make this offer for a limited time only.

NO. 5203 "BONUS-PAK" CONTENTS 30 No. 5210 for hose %" to %"

20 No. 5220 for hose 1" to 11/4"

40 No. 5228 for hose 1 1/4" to 1 1/4"

10 No. 5236 for hose 1 1/4" to 21/4"

A BONUS

OF 10

ADDITIONAL

Hy-Gear

NO. 5228

On every car in the Indianapolis 500







with every 3 cases of any Du Pont Nº "7" Products

(OR 4 CANS FREE WITH EACH CASE)

New Car Wax No. "7" Polish M. O. A. Liquid Anti-Rust Car Wash Cooling System Sealer Fast Flush Cooling System Cleanser Heavy-Duty Sealer Brake Fluid Spray Glaze **Rubbing Compound** "Dissolvo" White Tire Cleaner Chrome Polish Black-Rubber Dressing Clear-Rubber Dressing Waterless Hand Cleaner Foam Cleaner Tire Black Clear Windshield Sealer Auto Wax Speedy Cleaner **Bug Remover**

Car Upholstery Cleaner Multi-Service Cleaner Acid and Rust Inhibitor Gas Guard Windshield Washer Fluid **Black Sealing Compound** Touch-Up Enamel "Orel" Rubber Lubricant

NOW-A FULL-LINE DEAL FOR FALL-extra profit for you on every one of the popular Du Pont No. "7" Products above! This offer of new Du Pont Cooling System Sealer that seals faster, better than the five other leading brands is available for a limited time only to encourage early ordering. Stock up now and make even more profit on your profitable Du Pont No. "7" Line.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

the main service shop during peak business.

Unlike many garages which find themselves becoming cluttered up with junk after wrecked fenders and other parts are removed from a vehicle, Steiner's main service garage is always kept free of such obstacles. Careful thought has been given to provide areas for both scrap and storage of replacement body parts. Banged up panels and other parts taken off a vehicle are placed in an area behind the used car lot for the junk man to collect.

A balcony extending half way

across the main service shop along one side is used for storing slow moving items such as sheet metal, fenders, hoods and other panels and rebuilt engines. The balcony also is utilized for storing oil drums for overhead lubrication reels, thus permitting more actual "work room" on the floor.

The bump shop area is made up of two paint booths—one with a movable baking oven and the other with a stationary unit—and six stalls which have all the necessary tools and equipment for handling a job. Two painters and two body men make up the collision department staff. Service manager William Fitzgerald is in charge of all garage operations.

Steiner has always gone in for heavy advertising of his body shop. He has been promoting "complete and expert" body and paint work on six billboards placed strategically around the city and uses placards on a dozen taxicabs around town. In addition, the body shop is advertised periodically in community newspapers.

While some shops tend to lump all customer labor sales under one heading, Steiner's accounting practice has been to keep business of each department segregated. Metal and paint costs and profit records are kept separately from the mechanical department. Even work space of the body shop is completely divorced from the mechanical department. Body shop stalls are never used for service work, even if they are free.

For some unaccountable reason we're pleased to hear about people who are not entangled in the complications of the machine age. That's why we like the story of a woman who wrote this inquiry to the director of the home service department of the power company.

ower company.

"I have a little dog of which I am very fond," she wrote, "but I've been having trouble teaching him not to chew the electric lamp cords. If he ever bites through a cord and any of the juice leaks out onto the floor, will I get a shock if I mop it up?"







to use
the
Leading
Brand







to use the Leading Brand

When your custome brake work they're Give them as much of Wagner Lockheed B best possible protect due to inferior brake

When you team up you with the best brake pain. It builds busine confidence your cust and you satisfy your best job possible.



ers come to you for asking for safety.

of it as you can! With Brake Fluid you give the tion against brake failure e fluid.

your best brake work products you're bound to less . . . it fulfills the tomers place in you . . . rself by doing the

AMERICA'S LEADING BRAND

You're using the best when you use Wagner Lockheed—it's the hydraulic brake fluid that has led the field in sales... been the standard of quality for 33 consecutive years.

BACKED BY RESEARCH

As the leading supplier of hydraulic brake fluid to car and truck manufacturers and to the automotive service field, Wagner has spent half a lifetime of concentrated research in the development of safe brake fluid.

BETTER CHEMICAL BALANCE

This leading brake fluid is compounded of the finest ingredients, in the world's largest plant devoted exclusively to the manufacture of hydraulic brake fluid. It is chemically balanced to withstand sub-zero temperatures without freezing . . . extreme heat without gassing . . . to prevent gummy residue, swelling of rubber parts, or corrosion of metal parts . . . to mix with all other approved fluids . . . and to absorb a necessary amount of moisture.

SURPASSES SAE SPECIFICATIONS

Wagner Lockheed 21B surpasses all Society of Automotive Engineers' specifications for a heavy-duty brake fluid... and meets all state laws regarding brake fluid.

USED AS ORIGINAL EQUIPMENT

The many automobile, truck and trailer manufacturers who use Wagner Lockheed as original equipment prove its reliability. It's tops! And it's available in six container sizes from 12 oz. to 54 gallons.

Wagner Electric Corporation
6400 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U. S. A.
(Branches in principal cities in U. S. and in Canada)



the Wagner Lockheed line is complete ...

You can fill **ALL** your brake service needs from **ONE** convenient source...in your own area

There's no need for you to go to one place for some of your hydraulic brake parts—and to another for "hard-to-get" numbers . . . Save time . . . Save money . . . Get ALL your requirements from one source. You'll find the Wagner Lockheed line of brake parts the most complete on the market for all makes and models of cars and trucks.

WAGNER LOCKHEED BRAKE PARTS cups, boots, pistons, springs, washers, cylinders, hose—marketed as repair and replacement parts are manufactured to the same specifications, by the same machinery in Wagner plants, as parts used in complete assemblies for original equipment.

WAGNER LOCKHEED BRAKE FLUID
...BRAKE LINING and EXCHANGE SHOE
SETS—all are part of this complete line—all are
tops for quality. Try them—and you'll standardize on Wagner Lockheed. You'll have less grief
... waste less time ... and you'll make more money.

For details, consult your Wagner Jobber, or write us for Catalog AU-1.

Wasner Electric Corporation

6400 Plymouth Ave., St. Louis 14, Mo., U. S. A. (Branches in principal cities in U.S. and in Canada)

Brendan Byrne (second from the left), executive director of the American Heritage Foundation, presents a Foundation award for "promotion of citizenship" to the National Automobile Dealers Association. Frederick M. Sutter, NADA president, accepts the award, while Carl E. Fribley (far left), immediate past president of NADA, and Walter B. Cooper (far right), NADA Secretary, look on.

New Schrader Plant

The Schrader Division of Scovill Manufacturing Co. (Brooklyn, N. Y.) has constructed a new vulcanizing plant at Cannock, England. According to Schrader, the move is part of a general expansion program.

Fuel Injection

Continued from page 45

gine requirements for hot or cold starting temperatures.

The atomizing nozzle is the outward opening pintle type. Opening pressure is 80 psi.

The injection pump delivery can be changed to meet engine requirements by changing the plunger cam form to increase or decrease its stroke, or by changing the plunger diameter. This injection system is suitable for either manifold or direct cylinder injection. However, nozzles for direct injection would be more expensive.

The Marvel-Schebler timed injection system is reported to not only accurately meter the correct amount of fuel required by the engine, but also to control the time during which the fuel is sprayed into the air going to the individual engine cylinders. This feature of timed injection aims at optimum engine performance and fuel economy. Timed injection gives a smooth engine idle. Also improves engine response to throttle opening without an excessively rich fuel air mixture.





Modern BISHMAN Equipment is sold only through leading Automotive Equipment Jobbers. Ask your local jobber about Bishman Equipment to solve your service problems.



MANUFACTURING COMPANY ROUTE 2, OSSEO, MINN. lock rings are fitted into grooves on the inside of the bearing cup.

Drive out the lock rings, and using a flat punch, drive the universal cross from one side to the other. This will force the bearing out of the opposite side. Replace these two round bearings by using an arbor press or

squeeze together in a vise.

FOR DESOTO: Service on the cross and yoke type is the same as on Chrysler models, already covered.

For models using the ball and trunnion type, lubrication can be had by removing the propeller shaft and the dust cover on each end of the universal joint. Clean out old lubricant and examine parts for wear and then repack with a heavy fibre universal joint grease. Install new dust covers and re-assemble.

Note: Some models may be equipped with a plug in the housing. If this be the case, remove plug and install a Zerk fitting to lubricate.

FOR FORD, MERCURY, ED-SEL, LINCOLN, CONTINEN-TAL: Remove assembly from car. Take it apart like the method described for Cadillac universal joints.

FOR HENRY J: The slip yoke on this universal is located at the transmission. To remove, detach the joint at the rear axle pinion flange where it is held by

People who brag that they have the best of everything are not talking about manners.

two nuts on each bearing. Disassembly is done in the same manner as recommended on the Cadillac.

FOR HUDSON: On 1940 thru '47 model Hudson they used a single driveshaft from the rear of the transmission to the axle pinion. In 1948 and continuing thru '54 except the Jet model, all Hudsons are fitted with center bearing driveshaft having three universal joints. Two different types of shafts were used. One having the slip yoke on the rear shaft the other having the slip yoke on the front shaft.

From the standpoint of service there is no real difference between these two shafts since repair precedures are the same for both. On 1955 thru '57 models on the V8 they use a torque tube with a single universal joint at the front. In order to remove these, it is necessary to slide the rear axle back. Then remove the radius rods and the bolts which hold the torque tube to the rear axle housing.

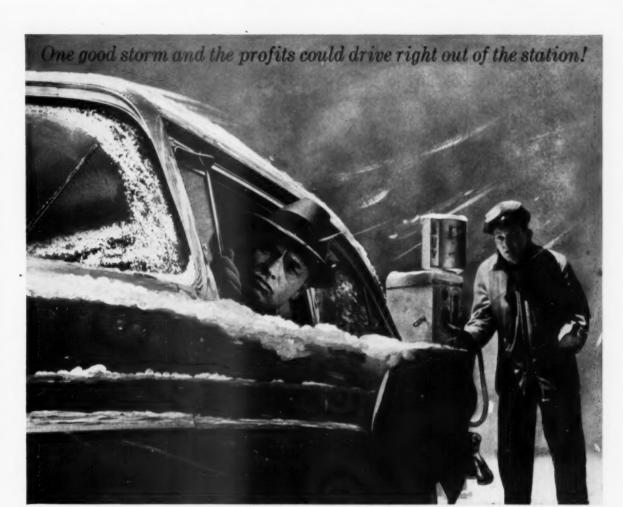
(Continued on page 108)



. . . More important because those big, browny engines are extraheavy and extra-sensitive. Motor mounts must hold high-powered engines in position to resist today's torque reaction — they must prevent road shock to finely-tuned motors. In short, they must do a bigger job than ever before. That's why up-to-date service shops always check motor mounts on major repair jobs. They know motor mounts are more important than ever. And they know it's more important than ever to prevent customer comebacks.



DOWN MANUFACTURING CORP.



DON'T GET CAUGHT SHORT ON TIRE CHAINS THIS YEAR!

One good blizzard is all it takes to move every set of chains you've got right out of the station. Stock up—protect your profits and be ready to give your regular customers the kind of service they've come to expect. They've heard about WEED V-Bar Tire Chains, so they'll buy them. Order soon.



WEED V-BAR TIRE CHAINS



American Chain & Cable Company, Inc., York, Pa., and Bridgeport, Conn. • In Canada: Dominion Chain Company, Ltd., Niagara Falls, Ont.

In Business for Your Safety

Universal Joints

Slide the torque tube forward which will give access to the driveshaft coupling on the Hornet series or the driveshaft sleeve on the Wasp. Disconnect the coupling or sleeve then slide the driveshaft out through the back of the torque tube.

To remove the rear universal

joint and propeller shaft on models thru 1954, disconnect the U bolts at the rear end and then at the center universal joint. Use a pair of needle nose pliers to remove the retaining snap ring from the bearings which are in front of the rear driveshaft.

Continued from page 106

Then take a broad punch or an old kingpin and drive the bearings inwards so that the cross will drive the bearing out on the opposite side. Take the bearing out of the opposite side and then drive the cross back in again until the first bearing is driven out of the yoke. This simply means that you drive from the right bearing to get the left one out. Then the left side to get the right one out. Once the two bearings are removed, the universal joint can be unlatched from the cross. Then rear propeller shaft can be taken out from under the

On the Kaiser and Frazer models 1947 thru '54 they used two types of universal joints. One the cross and bearing type and the other the ball and trunnion. These are similar to Chrysler and the same repair procedure should be followed.

car.

FOR OLDSMOBILE: Universal joints are the same type as used on Pontiac models.

FOR PACKARD: Two types are used: ball and trunnion and cross and bearing. To lubricate or overhaul use procedure as outlined for Chrysler.

FOR PLYMOUTH: Use same procedure as Chrysler.

FOR STUDEBAKER: On all models 1946 to 1957 they used cross and bearing type joints. All are fitted with two driveshafts having three universal joints. The slip yoke is at the center joint. The center bearing is mounted on the face of the frame cross member. These have to be taken apart to lubricate just like the procedure given in the Cadillac section.

FOR WILLYS: Ball and trunnion type universal joints are used on all models. These are serviced in the same manner as outlined on DeSoto models.

Success is the total of many little things well done.



Customer satisfaction—for keeps!

Your customers will notice the difference in smooth power and pickup when you switch them to Pennzoil with Z-7. This different kind of 100% Pennsylvania oil, blended with an exclusive ingredient that stays active, prevents wear and the formation of power-stealing deposits — keeps horsepower unlocked for keeps. It's a sure way to customer satisfaction — to more profitable service business.

Available in all correct service grades.

Get the complete Pennzoil profit story NOW!

Cash in on Pennzoil acceptance . . . call your nearest Pennzoil distributor or write Pennzoil, Box 78, Oil City, Pennsylvania.

MEMBER PENN, GRADE CRUDE OIL ASSN., PERMIT NO. 2



Speed Control Continued from Page 47

into the Speedostat to make possible a constant cruising speed on modern highways and turnpikes that will result in greater driving ease and fuel economies. It works like this: Once the pre-set speed has been reached, the driver pushes a button recessed in the speed

selector. At that moment, the Speedostat takes over the throttle control and the driver can remove his foot from the gas pedal.

This pre-selected cruising speed is automatically maintained up hill and down as well as on level stretches of road.

If additional speed is called for, the driver simply pushes down on the accelerator. Upon releasing the pedal, the Speedostat again returns the automobile to the pre-set speed.

The speed selector can be reset to any other speed during manual or automatic operation. Automatic operation is immediately cut off by touching the brake pedal.

Mechanical Highlights

The speed control is driven by the transmission and brought into action by a variable speed selector located on the dashboard or steering column.

A small, reversible electric motor activates the linkage to the accelerator pedal and carburetor. Contact points for forward and reverse energizing of the motor are closed and opened by a flyball governor under control of a helical governor spring that is depressed or released to calibrated positions by a cable from the speed selector.

In automatic operation, the button recessed in the axis of the selector lever closes a circuit, when pushed, that energizes an electromagnet. The magnet pulls down a latch which couples accelerator linkage and governor linkage. This electromagnetic circuit is broken instantly when the brake pedal is touched, thereby releasing the latch and returning accelerator linkage to the control of the driver.





Rust Master Pict-O-Poem



When customers drive in with steaming radiators . . .



There's no need to drain and flush to clean out rust and scale and to improve water circulation . . .



RUST MASTER - LEAK MASTER - SLUDG-MASTER - CARB MASTER - PARTS MASTER







engaging splines on the torque



locking sleeve with similar splines on the torsion bar driver. Two "torsion bars" are

conditions are taken into account and the effects of compression, temperature, and carburetion can be observed. Incorporating a cathode-ray tube which is the electronic method of obtaining a visual trace or image of the ignition cycle, definite or intermittent faults, it is said, are clearly shown by characteristic changes in the image shape. The "Anal-O-Scope" is said to be light weight, portable and comes with a power timing light and a set of spark plug adaptors. Write: Snap-On Tools Corporation (M.A.), 8028 28th Avenue, Kenosha, Wis.

Open End Wrench

Now available is a newly designed open end wrench called the Nutmaster. According to the manufacturer, the wrench applies its turning forces only on the flat faces of the nut and not on the corners. It is said that this new wrench grips a



nut at four places on the flat portions of the nut and makes it possible to turn badly worn nuts and bolts. Write: Blackhawk Hand Tools (M.A.), New Britain, Conn.

Hand Power Tool

An electrically operated hand power tool for running nuts, with full power and speed to a positive preset torque and then automatically shutting itself off when the preset torque is Speed up Brake Reline Service.

reached, has been announced.

The company states that the

"torsion bar" torque control

Impactool can be set to desired

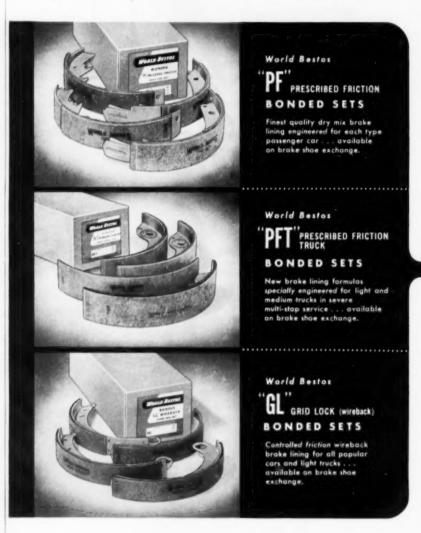
torque by using a wrench to

stress the "torsion bar" while

it is held in the vise. After the

bar is set to the desired read-

ing, it is held in that setting by



being offered, giving a torque range from 20 to 90 ft. lbs. Write: Ingersoll-Rand (M.A.), 11 Broadway, New York 4. N. Y.

Bumper Stiffeners

According to the manufacturer, Bumper Stiffeners are designed to protect the bumper of Volkswagens in the event of minor accidents. It is stated that the stiffener is made of two



pieces of steel channel, welded back to back. The front and rear bumpers are designed to fit the Volkswagen without any cutting, drilling or adjusting of any kind, the company states. Write: Berkeley Auto Accessories (M.A.), 2567 Shattuck Ave., Berkeley 4, Calif.

Front End Lift

Designed to be used principally in brake and tire shops, the Lee "Jr" front end lift is also said to be a versatile lift for rotating tires, wheel balancing and brake and wheel service. According to the manufacturer, the Lee "Jr" front end lift is 57" long, 27" wide and 28" high. It weighs 260 lbs. It is claimed that it will



lift to a height of 34" and automatically locks at any of the eight different working heights provided. The rear wheels are roller bearing mounted for maneuverability of the unit. Write: Automotive Equipment Mfg. Co. (M.A.), 11000 So. Alamedø St., Lynwood, Calif.

New Literature Engine Specification Book

An engine specifications and data book has just recently been published. According to the company the book contains engine specifications and data for all makes and models of passenger car engines. It is said that the manual covers all passenger car engines for the years 1952 through 1957. It contains data on engines, connecting rods, crankshafts, camshafts, piston, piston pins, piston rings and

(Continued on page 116)

MAKE MORE MONEY ...

with WORLD BESTOS

BONDED BRAKE SHOE SETS

Finest quality DRY-MIX and

WIREBACK Bonded Shoe Sets for passenger cars, light and medium trucks . . . available on

BRAKE SHOE EXCHANGE

from your World Bestos Distributor!



Complete bonded brake coverage for all types of vehicles . . . readily available from your World Bestos distributor . . . means faster reline service, bigger volume and profit for your shop! As with all World Bestos lining, dependable stopping power, fade control and long wear are the big

quality features that make World Bestos Bonded Brake Shoe Sets unsurpassed for safety and customer satisfaction!

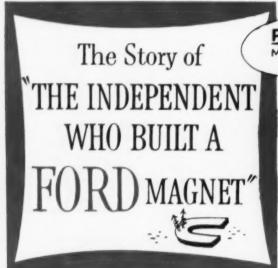
Only World Bestos Bonded Sets give you so many advantages to help you do your finest and safest brake work on every job!

Call your World Bestos Distributor today for full information about Bonded Brake Shoe Exchange service for passenger cars, light and medium trucks.

World Bestos gives you MORE STOPPING POWER

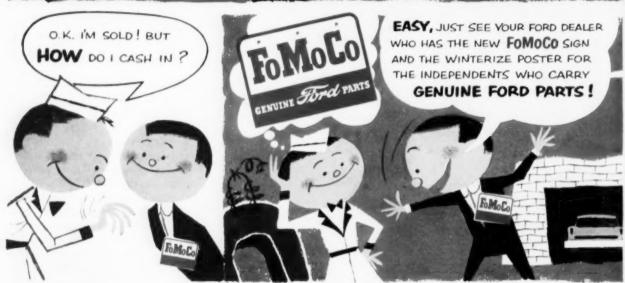


WORLD BESTOS NEW CASTLE, INDIANA









NOW WHAT'S
THE MATTER WITH

YOU'RE ATTRACTING FORDS THE HARD WAY, FRIEND.
HAVEN'T YOU HEARD THAT FORD IS PUTTING
ON THE BIGGEST WINTERIZING

THIS THING? PROMOTION EVER!



OOPS!



THESE TWO FULL-PAGE 4-COLOR
ADS IN LIFE, READER'S DIGEST,
AND THIS WEEK WILL

REACH MORE THAN 30
MILLION PEOPLE! THEY URGE
FORD OWNERS TO HAVE THEIR
CARS WINTERIZED WHERE
THEY SEE THE FOMOCO
SIGN.



AND THAT'S ONLY PART OF IT. FOR YOUR OWN USE FORD'S MAKING AVAILABLE FREE WALL POSTERS TO TIE YOU INTO THE PROMOTION.

OR JUST CLIP

AND MAIL THIS

COUPON!

NO NEED FOR THIS THING ANYMORE!

PARTS AND SERVICE SALES PROMOTION DEPARTMENT

Ford Division, Ford Motor Company, Box 658, Dearborn, Mich.

Please send me complete information telling me how independent garages and service stations can get a Genuine Ford Parts sign. Ud like to cash in on this, too!

FIRM NAME.

INDIVIDUAL'S NAME.

ADDRESS_____

CITY_____ZONE__STATE____H-9



THROW IT AWAY!
YOUR FOMOCOSIGN
WILL BE A REAL

MAGNET, BECAUSE FORD OWNERS ARE PRE-

SOLD ON GENUINE



New Literature

• Continued from Page 113

valves. Write: Tobin-Arp Mfg. Co. (M.A.), 6400 Penn Ave., S., Minneapolis 23, Minn.

Piston Ring Catalog

A 96-page catalog has been released recently which lists the manufacturer's recommendations for 10-up sets utilizing full chrome, partial chrome, cast iron and steel ring combinations as required to meet the conditions of different engine designs. The new edition, it is said, has been simplified in listing arrangement. Engineered 10-up sets listed cover from 1930 to the

1957 cars, trucks, buses, tractors, stationary engines and light weight two and four cycle engies. Write: Ramsey Corporation, Sales Promotion Dept. (M.A.), St. Louis 8, Mo.

Welding Charts

Two new two-color wall charts, said to be designed for technical schools and plant training programs in the practical aspects of torch and arc welding are now available. Each chart, measuring 22 by 34 inches shows illustrations of correct arc and torch welding procedures. The torch applications chart explains the meaning of low temperature welding, examines the good and bad of common joint designs. and the purposes for which thin flowing and bead forming alloys are designed. Write: Eutectic Welding Alloys Corporation (M.A.), Flushing 58, New York.

Spray Booth Catalog

Spray booths of various types, sizes and applications are said to be shown in a catalog just released. Included are descriptions and specifications for custom design units and ready-made units. According to the company, these units can be erected with a wrench and screwdriver. Also included is information necessary for selection of the right type and size spray booth. Write: The DeVilbiss Company (M.A.), Toledo, Ohio.



Here's just part of the damage improper timing can cause



PLUG FOULING. Creates fuel waste, starting difficulties.



SCORED CYLINDERS. Reduce compression, waste oil and fuel.



BURNED VALVES. Cause fuel waste, cut engine efficiency.



DAMAGED PISTONS. Result of backfire through carburetor.

Use LINK-BELT... world's finest original equipment line

Overlooking faulty valve timing caused by timing chain and sprockets that have worn excessively can spoil even the most careful overhaul. Protect your reputation by installing Link-Belt timing chain and sprockets. It's easy while the engine is down. And Link-Belt's design substantially reduces or keeps to a minimum, slap, backbend, whip—keeps engines accurately timed

for thousands of miles. See your jobber—ASK for Link-Belt timing chain and sprockets by name—DO NOT accept a substitute. Link-Belt is original equipment, designed, engineered and manufactured by Link-Belt Company.

LINK®BELT

TIMING CHAIN AND SPROCKETS

LINK-BELT COMPANY: 220 South Belmont Ave., Indianapolis 6, Ind. Warehouses in all principal trading areas. 14,477-R







Gone Today . . . Here Tomorrow

Your stock of Pittsburgh Safety Glass can be completely gone today... and you can have all you want tomorrow. That's the beauty of Pittsburgh Plate's 24-hour-or-less delivery service.

To get this swift delivery service on Pittsburgh Safety Glass — curved or flat, clear or Solex®—just phone your nearest Pittsburgh Branch or Distributor. These branches and distributors are supplied by Pittsburgh Plate's Depots... warehouses that carry glass to fit any make of car or truck, no matter what the model or year.

Here's what this quick delivery means to you . . .

- 1. CUSTOMER SATISFACTION
- 2. REDUCED INVENTORY COSTS
- 3. LESS STORAGE SPACE NEEDED
- 4. LESS GLASS HANDLING

Take advantage of the fact that Pittsburgh DUPLATE® and DUOLITE® Safety Glass, and HERCULITE® Tempered Glass, can be in your auto glass replacement shop or dealership within 24 hours after your phone call. For full information, contact your nearest Pittsburgh Branch or Distributor. Pittsburgh Plate Glass Company, 632 Fort Duquesne Boulevard, Pittsburgh 22, Pennsylvania.



PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

BIGGEST NEWS

BLUE SUNOCO'S

Fuels to fit every car—from one automatic pump

eXCLUSIVE with Sunoco dealers



SUN OIL COMPANY, Philadelphia 3, Pa.

IN MOTOR FUELS

Custom Blending

Soon, your customers will be able to get motor fuels fitted to the exact octane needs of their individual cars, including the highest compression models you sell.

- This is your answer to customer complaints of engine knocks and the high cost of motor fuel for the newest high-compression engines. It will be available early in 1958 exclusively at Sunoco dealers.
- Once those customers visit a Sunoco dealer and have their cars "fitted" for the right motor fuel, they get full knock-free performance and maximum economy obtainable in no other way.
- It's the ideal solution to every car dealer's problem of helping his customer obtain the right fuel at the right price for the car he buys.

ON THE WAY 6 Great blends from Sunoco's automatic blending pump.

Available today

Premium Quality 2

Highest octane anywhere at regular gas price.

New Super 240

Best value for highest compression cars.



NO MORE VAPOR LOCK!

That's why **Bendix Electric Fuel Pump Sales** are Zooming



There's no substitute for on-thejob performance. That's why people who have tried all the others always come back to the Bendix* Electric Fuel Pump when they need "must do" performance. The Bendix pump has passed all the tests. Under military supervision, it proved itself at 114° Fahrenheit as well as at 76° below zero. No other pump anywhere near its price class could make the grade. The Bendix Electric Fuel Pump is easy to install and service, delivers more gallons per hourand positively eliminates vapor lock. It's the best fuel pump built. WREG. U.S. PAT. OFF.

Bendix

BENDIX AVIATION CORP. (Eclipse Machine Div.), Elmira, N. Y.

SUPERIOR'S AUTOMOTIVE SPECIAL!



with Famous Metering Trigger

. 7 HAND-FORGED TOOLS

. REGULATOR

. TOOL BOX

Complete kit, a \$120.55 value Only

Superior's famous model HDS-700 Air Hammer weighs only 3% lbs., measures just 8" overall, has a 3" piston stroke. Metering trigger delivers 0-2700 controllable blows per minute-does all the heavy jobs easily. Tools include special clean-cutting panel cutter that eliminates dressing or leading Fast-cutting muffler and tail pipe tool also available



FOR FULL DETAILS AND NAME OF NEAREST DISTRIBUTOR, WRITE DEPT. MA-

SUPERIOR PNEUMATIC & MANUFACTURING, INC. 4758 Warner Rd. Cleveland 25, Ohio

Lubrication .

Continued from page 55

located in the engine compartment from which nylon tubing extends to each front end chassis bearing. On the tip of each nylon tube is a coupling which fits over the regular grease fitting.

A plunger in the master cylinder pushes forward, forcing the required amount of light lubricating grease through each tube into the bearing. The vacuum power to force the plunger forward is activated by a control button on the instrument panel. This lets the driver keep the car fully lubricated by merely pressing the button once a day. The entire operation requires only a couple seconds, and a green light on the control panel indicates the job has been done.

Exhaustive durability tests have shown that there is no danger of fatigue breakage from vibration and the constant motion of front suspension and steering. The tubing is said to have an indefinite life expectancy.

The high pressure lubrication system was designed by the Lincoln Engineering Company, St. Louis. It is a vacuum-operated system that lubricates the chassis bearings merely by pushing a button on the dashboard.

All of the feed lines are covered with varnish-coated fiberglas loom, and clipped securely to chassis parts on the way to the bearings. The lines are connected to the bearings by specially designed hydraulic adapters which lock fast to the grease fittings. This assures a positive leakproof connection.

Under average conditions, the injection pressure at the bearing is approximately 2,000 psi. The lubricant output to each bearing is usually .002 ounce.

The car is thoroughly lubricated by cycling the system every 50 miles or once a day.

Feeder lines from the 12 outlet ports in the hydraulic booster are taped together to form a compact, easily handled harness for simplicity of installation.

Separate feed lines are used for each bearing so that each one receives an equal amount regardless of the fit of the bearing.

Bearings served by the system consist of the selector lever (where applicable), upper and lower ball suspension joints, left and right wheel, inner and outer tie-rods left and right, left and right center links, idler arm (where applicable) and clutch equalizer bar (where applicable).

HARDLY A
FANCY PANTS...

There Set S for E Top

NO FRILLS · NO TRICKS · JU

THE FAMOUS
McQUAY-NORRIS



IT'S IN EVERY





PISTON RING SET

There's a **EAK ROOF** Set Specifically Designed for Every Make and Model. Top Chrome Rings Where Needed.

McQUAY-NORRIS MANUFACTURING CO.

ST. LOUIS . TORONTO

LARGEST PRODUCER OF SMALL RINGS IN THE AUTOMOTIVE INDUSTRY

ST GREAT PERFORMANCE



HAVE CRACKED THE OIL MILEAGE BARRIE



TOP PERFORMANCE IMMEDIATELY.

Chrome Control rails are prepared for instant mating, before installation, by the exclusive McQuay-Norris heat shaping process, followed by lapping. They start with perfect bearing on the cylinder wall surface. To facilitate immediate top performance, Chrome top rings are used only where needed.











NO OIL WASTE!

AT HIGH SPEED DRIVING.

Special patented flexible expander prevents high speed ring "flutter" and "surfboarding". Chrome Armored steel rails wipe oil from cylinder walls and safeguard cylinders.

AT LOW SPEED DRIVING.

Specially designed and machined separator ring supports and stabilizes Chrome Armored steel rails-prevents rocking-seals the groove-prevents low speed oil "c-r-e-e-p" around the ring due to high vacuum-yet permits free action in the groove.





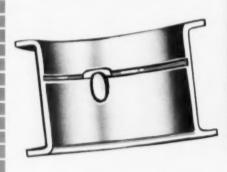
... and for Rugged Performance use

McQUAY-NORRIS BEARINGS









Engineered
and Built for
Today's Great
Horsepower
Race

APPROVED ORIGINAL EQUIPMENT FOR CARS, TRUCKS, BUSES, AND TRACTORS

McQUAY-NORRIS MANUFACTURING CO.

ST. LOUIS · TORONTO

LARGEST PRODUCER OF SMALL RINGS IN THE AUTOMOTIVE INDUSTRY



Garroway sells PYRO

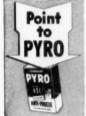
(boosts early anti-freeze sales)

This Fall, Olin Mathieson is backing Pyro dealers with a TV show that's a natural. Starting September 20, Dave Garroway will tell the millions of viewers of NBC's Today show to point to Pyro and get their anti-freeze early. And, Garroway's message will be paired with Today's popular national weather report. So you can be sure your customers will be reminded that freezing weather is on the way . . . that

now is the time to get anti-freeze!

Don't forget! Early anti-freeze selling means you'll have time to give your customers complete anti-freeze service . . . and time for more related sales and profits. In addition, when you have your regular customers protected before the anti-freeze rush, you'll be able to take on cars that your competition can't handle.

Use these posters to make yourself early anti-freeze headquarters



MISS MONITOR says: freezing weather on the way...

Buy your anti-freeze early!



Miss Monitor is going to help Dave Garroway push early antifreeze sales. Starting September 22, you'll be hearing her heartwarming voice on NBC's Monitor—the weekend radio program that blankets the nation. Miss Monitor will give her famous temperature reports and urge car owners to get their anti-freeze early. Your Miss Monitor poster set is a perfect tie-in.

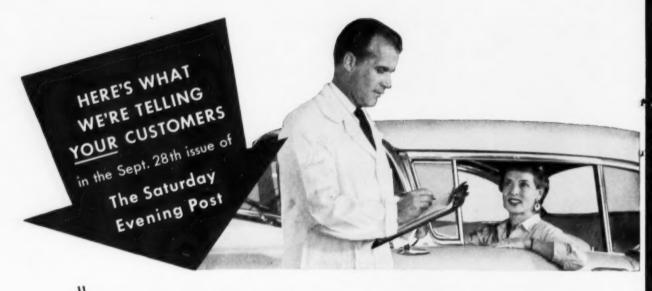
See your PYRO® Jobber now!



Back by industry demand! Here's our famous Have-A-Heart poster...now with eye-catching color. The artist Dohanos' hardworking dealer pleads with customers to get their anti-freeze early. Successful? Ask anyone who used it last year!

Pyro's Today messages will be televised from the Atlantic to the Rockies. Super PYRO R and Permanent PYRO R are trademarks.

OLIN MATHIESON CHEMICAL CORPORATION, Automotive Products Department, Baltimore 3, Maryland



The N·A·P·A Parade of Parts helps good repairmen serve you better"

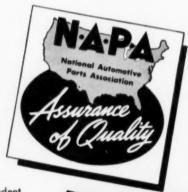
"When a car or truck needs repairs, everybody asks the repairman: "How fast can you get the job done?" Since the answer so often depends on how quickly the needed parts can be obtained, more and more repair shops are standardizing on the famous automotive brands listed in these pages.

"These nationally advertised parts and supplies—the N•A•P•A "Parade of Parts"—are quickly available to repairmen everywhere. In a single call on the N•A•P•A Jobber in your community, your repairman can obtain everything needed for the job, on any make of car or truck. The time he saves, he can spend on your car!

"And when the repairman uses the parts listed here, you can be sure of this: the N·A·P·A Seal is your assurance of genuine quality—backed by the largest independent parts organization in the automotive industry."

It will pay every repair shop—every mechanic—in time saved, in the assurance of quality, and in customer confidence—to take full advantage of the time-saving supply service offered by more than 2,700 N·A·P·A Jobbers and the 45 N·A·P·A Warehouses which serve them. Visit your N·A·P·A Jobber during the "Parade of Parts." You will agree that he "is a Good Man to Know!"

- Only Nationally Advertised Parts and Supplies of Genuine Quality Are Identified by This Seal
- They Are Backed by the Nation's Largest Independent Automotive Parts Organization
- They Are Quickly Available to Your Repairman —for Cars, Trucks and Tractors of All Makes and Ages—from the Same Nearby and Time-Saving Source of Supply—the N·A·P·A Jobber



National Automotive Parts Association, Detroit, in behalf of the thousands of independent



who supply the automotive repair trade from coast-to-coast with these—and many other—nationally advertised brands of quality automotive parts and supplies.

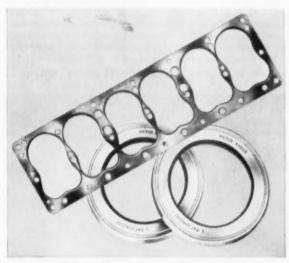




Automotive Finishes

A fast-selling, steady profit-maker for car dealers and paint shops . . . America's popular new touch-up spray lacquers. Complete with self-selling counter and floor display racks. Late model matching colors in handy 6-oz. spray cans. Finest quality for beautiful, hard, high-gloss finish. See your N-A-P-A jobber now!

MARTIN-SENOUR, 2500 SOUTH SENOUR AVE. - CHICAGO 8, ILLINOIS



Victor Gaskets and Oil Seals

When you need gaskets and oil seals, your N-A-P-A Jobber offers you the most comprehensive selection of factory approved Victor parts, for all makes of passenger cars, trucks, tractors, buses and stationary engines . . . Packaged individually and in sets for valve grinding and complete overhaul jobs. Get them for your N-A-P-A Jobber.

VICTOR MANUFACTURING & GASKET CO. - CHICAGO 90, ILLINOIS



Allied Engine Parts

When new engine parts are needed, look to Allied and your N·A·P·A Jobber for the finest of parts, the fastest service and the most comprehensive coverage. The plants which produce Allied Motor Parts are all specialists in their fields, with engineering "know-how," production facilities and manufacturing capacity unsurpassed in the industry.

ALLIED AUTOMOTIVE PARTS COMPANY . CINCINNATI, O.



Balkamp Carburetor Tune-Up Kits

The sensitivity of modern carburetors, and the necessity of precision adjustment for efficient engine performance in connection with automatic transmissions have made the use of Carburetor Tune-Up Kits a "must" for fast, effective and economical tune-up jobs. Balkamp offers the most complete line in the industry available from one source. See your N-A-P-A Jobber.

BALKAMP, INC. . INDIANAPOLIS, INDIANA

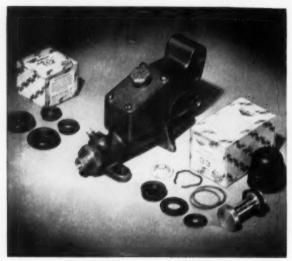
"Parade of Parts"-the greatest in the industry





NAPA

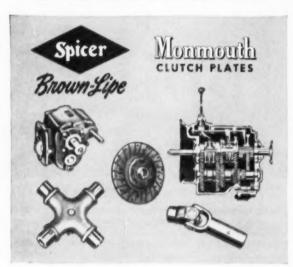
"Parade



United means dependability

UNITED Hydraulic Brake Parts are replacement engineered and specifically designed to completely restore the hydraulic brake system to peak operating efficiency. Automotive servicemen the world over have dependably applied UNITED brake parts for over a quarter century. Use UNITED. Your N·A·P·A jobber features this brand.

UNITED PARTS MFG. CO. . CHICAGO, ILLINOIS



Dana Products

Just as practically all vehicle makers depend on DANA-made Products, you can depend on Spicer and "Mechanics-Type" Universal Joint Kits; Spicer Transmissions; Spicer Power Take-Offs and Joints, and Monmouth Clutch Plates.

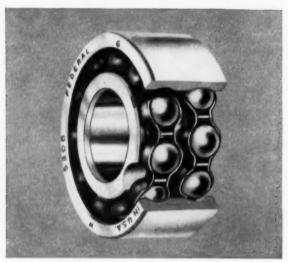
DANA CORPORATION . TOLEDO 1, OHIO



B∗K Mileage Minder

Puts an end to rough idling, traffic stalling, flooding, vapor-lock, and strong gasoline odors inside the car. Improves gasoline mileage. The B*K Mileage Minder is a combination fuel filter and pulsation dampener. Removes all dust and dirt from fuel stream; traps vapor-locking gases; smooths out fuel-pump pulsations; delivers even flow of gas to carburetor.

B*K SERVICE PRODUCTS - INDIANAPOLIS, INDIANA



Federal Ball Bearings

Most complete ball bearing line for the automotive industry. Used as *original equipment* on millions of vehicles by leading manufacturers. Chosen by repairmen as the ideal replacement bearing, *Federal Ball Bearings* are dependable—backed by the dependable source of supply—your N·A·P·A Jobber!

THE FEDERAL BEARINGS CO., INC. - POUGHKEEPSIE, NEW YORK

of Parts"





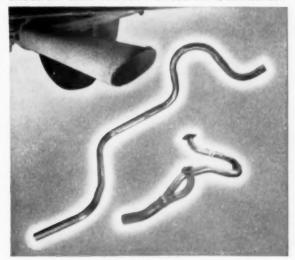
nationally advertised brands for CARS, TRUCKS, TRACTORS · ALL MAKES · ALL AGES!



Be safe with a new valve for each new tubeless

Always install a new Bridgeport valve when mounting a new passenger tubeless tire. It's safer, smarter, and more profitable. You can service *any* tire with only the two sizes of Bridgeport Snap-in Valves—or the Bridgeport Universal Metal Clamp-in Valve—plus the two extensions shown. Order them from your N-A-P-A Jobber today.

BRIDGEPORT TIRE VALVES & ACCESSORIES
BRIDGEPORT BRASS COMPANY • BRIDGEPORT 2, CONNECTICUT



Soundmaster Exhaust and Tail Pipes

For safety's sake, always check the exhaust and tail pipes when you check the muffler. Leaks, rust, fractures and loose connections can expose customers to the dangers of deadly "C.O.," just as much as a rusted-out muffler. For prompt, complete service, see your N·A·P·A Jobber for Soundmaster exhaust and tail pipes—engineered to fit, built to endure.

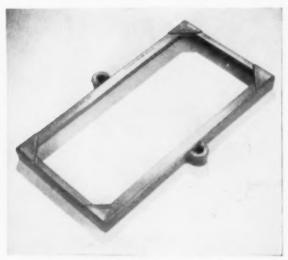
DEKOVEN MANUFACTURING COMPANY . RACINE, WISCONSIN



Now Available in Harmonizing Colors

Prospect Floor Mats fit better and wear longer because the exact shape of the car floor is permanently built into the mat, and because they are constructed of the same quality materials supplied to car manufacturers. Easier to install because holes for pedals, accelerator, etc., are pre-punched accurately. Now available in blue, green, or gray for late model cars.

PROSPECT RUBBER CO. . CLEVELAND, OHIO



Balkamp Plastic Battery Hold-Downs

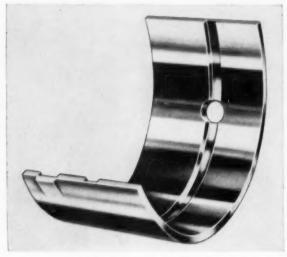
With cold weather and battery troubles just ahead, it's a good idea to keep Balkamp Plastic Battery Hold-Downs in mind. They are strong, flexible and impervious to acid. They cannot corrode, short-circuit or burn. They do not cling or adhere to the battery. They are easy to install or remove. Save you time. Make you money. See your N-A-P-A Jobber.

BALKAMP, INC. . INDIANAPOLIS, INDIANA



NAPA

"Parade



Monmouth Engine Bearings

MICRO AND CLEVITE 77

Designed Right—by the engineers who design most original equipment.

Made Right —by the world's largest bearing manufacturer.

Sold Right -N·A·P·A service.

CLEVITE SERVICE DIVISION - CLEVELAND, OHIO



B∗K Spray Starting Fluid

For quick starts the year round, in extremes of cold or dampness, use B*K Spray Starting Fluid in the pressurized can. Engines start in seconds when you spray the fluid directly into the air cleaner or intake air stream. Works with gasoline or Diesel-powered equipment of all kinds. Saves time, batteries, and towing costs. No waste. Completely safe.

B*K SERVICE PRODUCTS - INDIANAPOLIS, INDIANA



Automotive Finishes

Martin-Senour's highest-quality finishes—in the industry's widest range of colors—help assure *completė* customer satisfaction! Best color match, best blend-in, best gloss. Factory-packaged or custom-mixed colors, thinners, reducers—everything you need to do the whole job! Use Martin-Senour products *exclusively!*

MARTIN-SENOUR, 2500 SOUTH SENOUR AVE. . CHICAGO 8, ILLINOIS



Dittmer Transmission Gears

Since 1919 Dittmer Transmission Gears have kept automobiles and trucks operating all over the world. DITTMER products are recognized everywhere as top quality. They are truly "Second to None" in mathematical accuracy, metallurgical treatment and appearance.

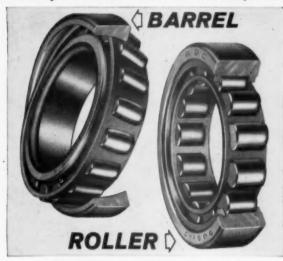
DITTMER GEAR DIVISION - AUBURN, INDIANA







nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



RARITAN Roller Bearings

Raritan's through hardened Barrel Bearing races and rollers made of high alloy electric furnace steel are metallurgically superior and dimensionally correct. Flexible and self-aligning, they withstand overloads imposed by shaft deflection and misalignment at today's higher power and speeds. Every time you replace a Barrel Bearing, replace with a superior Raritan.

RARITAN BEARING CORPORATION . WEST TRENTON, NEW JERSEY



If you do an overhaul without checking the timing chain and sprockets, you're taking a 300-to-1 chance with your customer's good will. A worn timing chain set impairs the operation of as many as 300 moving parts. Rely on your N-A-P-A Timing Service for complete customer satisfaction. CHAIN Belt Company, 410 Plainfield Street, Springfield 1, Massachusetts.

DUCKWORTH QUALITY TIMING CHAINS



Sell New Car Performance!



For extra profit and customer good will, check Ignition Contacts and Condenser every 5,000 miles; other electrical parts, every 10,000 miles. Please your customers and pocket the profits —install ECHLIN Quality Parts every time!

ECHLIN MANUFACTURING COMPANY . BRANFORD, CONNECTICUT



This promotion is a dealer's best friend!

We've put "STOPPER," American Brakeblok's famous trademark, in the POST to direct customers to your shop for a complete brake service! And we'll give you powerful local support with "STOPPER" on posters, banners and displays to tell customers why a complete brake service is a safety necessity. Check with your N-A-P-A Jobber!

AMERICAN BRAKEBLOK DIVISION . DETROIT 9, MICHIGAN



MAPA

"Parade



Safe - All Around

When you use United Hydraulic Brake Parts, either Master or Wheel Cylinder Assemblies, Repair Kits or miscellaneous brake parts . . . You're Playing It Safe . . . Service Safe! United brake parts conform to specifications 60R1 and/or 60R2 prepared by Society of Automotive Engineers.

To be Sure . . . Get UNITED from your N-A-P-A Jobber.

UNITED PARTS MFG. COMPANY . CHICAGO, ILLINOIS



Thomson Thermostats — the complete line

To all cooling systems, Thomson Thermostats bring the advantages of the tight-sealing, trouble-free poppet valve. For pressurized systems, the revolutionary "HP" Stat with the exclusive reverse-action valve. . . . For other systems, the Thomson Electrofused bellows-type. Both widely used by vehicle makers—meet or surpass original equipment standards.

STANDARD-THOMSON CORPORATION . BOSTON, MASS.



ECHLIN Ignition

VISUMATIC • Visual stock control • Room for expansion • Perpetually balanced stock • Annual modernization • Guaranteed against obsolescence • The part you want when you want it—

ECHLIN MANUFACTURING COMPANY . BRANFORD, CONNECTICUT



Allied Chassis Parts

In Allied Chassis Parts, N-A-P-A Jobbers offer "the complete coverage line," engineered and built to original equipment standards in materials and tolerances. Includes Wheel Suspension Parts, Coil Springs, Steering Parts, King Bolt Sets, Shackles, and Ball-Joint Suspension replacements. Make your N·A·P·A Jobber your headquarters for Chassis Parts.

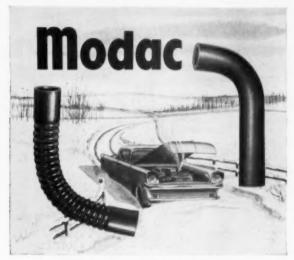
ALLIED AUTOMOTIVE PARTS COMPANY . CINCINNATI, O.

of Parts"





nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Worry-Free Winter Driving

Driving this winter will be a pleasure, not a problem, if you prepare for it now. Give your car a *complete* winterizing checkup today. Before adding anti-freeze, check the radiator hose. If it's cracked or worn, replace it with MODAC radiator hose. Built tough, MODAC radiator hose assures you long, faithful service. Get MODAC... for motoring peace of mind.

HAYWOOD INDUSTRIES . WAYNESVILLE, N. C.



Safe · Sure · Wires and Cables

- -if it's worth a serviceman's time
- -it's worth good wire and cable

BELDEN MANUFACTURING COMPANY . CHICAGO, ILLINOIS



Fleet Service Jacks

There's a service jack for every requirement in the Fleet line of hydraulic and mechanical jacks, from one-half to twenty-ton capacity. Ask your N-A-P-A jobber for a new Fleet catalog or write—

EDGEWATER AUTOMOTIVE DIVISION . ST. JOSEPH, MICH.



Soundmaster Mufflers

Soundmaster Mufflers last longer, and do their job better because the high performance built into these mufflers is prolonged by "Corrosion-Balance." Attained by the proper use of Corrosion-Resistant Materials; by Temperature Control, and "Zonal Drainage" Soundmaster's Corrosion-Balance assures customer satisfaction on single or dual systems.

DE KOVEN MANUFACTURING COMPANY - RACINE, WISCONSIN



NAPA

"Parade



Famous Hand Tools

The complete Line of top-quality, professional Tools designed for mechanics by mechanics—including the great new Automatic Transmission Tools that open up this money-making service field for you. Ask for New Britain Tools. They're engineered to handle today's repairs and service—faster for you!

THE NEW BRITAIN MACHINE CO. . NEW BRITAIN, CONNECTICUT



Briggs "Hydro-Muscle"® Ride Control

Car owners don't understand "shock absorbers." What they want and will buy is *Ride Control*—Briggs "Hydro-Muscle" Ride Control. A year-round safety necessity. Ask your jobber for the high-profit, fast-action assortment of 12 Briggs "Hydro-Muscles"—potent Muscle Man selling tools included FREE to tie in with big-space national ads.

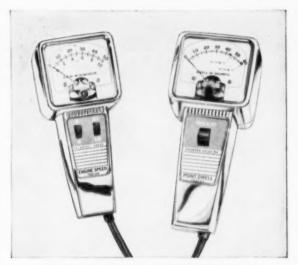
THE BRIGGS SHOCK ABSORBER COMPANY . CLEVELAND, OHIO



Put the Spotlight on SAFETY SERVICE

This new portable Displaymobile turns your Trico Stock Organizer Cabinet and Vis-U-Lid into a movable Wiper-Washer service department. It's a step-saver, a sales-maker... puts your merchandise where the car owner will see it. Use on service floor, lubritorium, or roll out to island near gas pump. Available free of charge with a small stock of arms or blades.

TRICO PRODUCTS CORPORATION - BUFFALO 3, NEW YORK



B∗K Tachometer and Dwell Tester

Two new B*K testing instruments essential to every shop mechanic working on modern cars. The B*K Tachometer adjusts itself automatically to 6 or 12 volt operation; is compact, operated with one hand, easy to read. The B*K Dwell Tester is equally easy to operate—equally necessary in working on "external adjustment" distributors.

B*K SERVICE PRODUCTS - INDIANAPOLIS, INDIANA

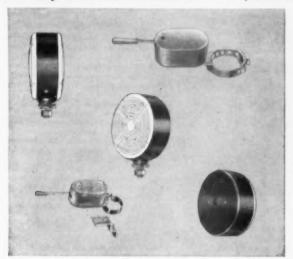
of Parts"







nationally advertised brands for CARS, TRUCKS, TRACTORS • ALL MAKES • ALL AGES!



Visall Safety Products

Class A turn signals with colorfast Lucite plastic 4% diameter lens . . . entire illuminated surface of light produces maximum candle power with perfect S.A.E. pattern . . . places all available light where it belongs. Heavy gauge steel body with reinforcing plates. Available in black enamel bonderized steel or highly polished chrome.

VEHICLE PRODUCTS COMPANY . CINCINNATI, OHIO



MicroTest Automatic Transmission Parts

The service on automatic transmission parts and kits offered by MicroTest through N•A•P•A Jobbers is the most comprehensive in the industry. Covers all cars; includes complete rebuilding kits, planetary repair kits, gasket sets, oil-pan gaskets, individual sealing rings, sprag clutches, brake bands, clutch plates, etc. Clearly cataloged. Genuine quality assured.

MICROTEST GEAR COMPANY . INDIANAPOLIS, INDIANA



Puritan Brake Fluid

Protect your customers—Protect your profits. Only the best brake fluid is good enough for your customers and you can afford to handle and sell only the best—Puritan Super 60. It's the top quality, top performance heavy duty brake fluid that meets and exceeds SAE Specification 70R1 by a wide range!

OLIN MATHIESON CHEMICAL CORPORATION - BALTIMORE 3, MD.

Other NAPA Lines

CELORON® Timing Gears
Continental Fibre Division, Cleveland, Ohio

DETROIT Universal Joints and Kits Detroit Universal Division, Dearborn, Michigan

CLEVELAND Universal Joints
Cleveland Steel Products Corporation, Cleveland, Ohio

HAARTZ-MASON Friction Tope Haartz-Mason, Inc., Watertown, Massachusetts

K. O. LEE Valve Seat Inserts

K. O. Lee Company, Aberdeen, South Dakota

MICROTEST Axle Shafts

MicroTest Gear Company, Pottstown, Pennsylvania

MICROTEST Drive and Pinion Gears • Flywheel Gears Balkamp, Inc., Indianapolis, Indiana

MODAC Auto Mats

Wooster Rubber Company, Wooster, Ohio

MODAC Service Hose and Splash Guards B. F. Goodrich Company, Akron, Ohio

ROCKFORD Fasteners, Screws, Bolts and Nuts Rockford Screw Products Company, Rockford, Illinois

SKIL Power Tools

SKil Corporation, Chicago 30, Illinois

ZOLLNER Heavy-Duty Pistons

Zollner Machine Works, Fort Wayne, Indiana

Calendar Of Coming Events

Dealers Conventions

Sept. 15-16 - Kentucky Automobile Dealers Assn., Sheraton Seelbach Hotel, Louisville.

Sept. 15-17 - Colorado Automobile Dealers Assn., Colorado Hotel, Glen-

wood Springs, Colorado. Sept. 16-17 — Minnesota Automobile Dealers Assn., Nicollet Hotel, Minneapolis.

Sept. 16-17 - Wisconsin Automotive

Trade Assn., Milwaukee. Sept. 19-21 — Arkansas Automobile Dealers Assn., Marion Hotel, Little Rock.

Oct. 1-3 - New Jersey Automotive Trade Assn., Cl Hall, Atlantic City. Chaifonte-Haddon

Oct. 2-4—Texas Automotive Dealers Assn., Baker Hotel, Dallas.

Oct. 20-21-Oklahoma Auto Dealers Assn., Tulsa.

Oct. 20-22-Florida Automobile Dealers Assn., Balmoral Hotel (Bal Harbour), Miami Beach.

ov. 3-5 — Mississippi Automobile Dealers Assn., Buena Vista Hotel, Nov. 3-5 -Biloxi.

Connecticut Automotive Nov. 7 -Trade Assn., Hotel Statler, Hartford.

Nov. 10-12—Ohio Automobile Dealers Assn., The Neil House, Columbus. Nov. 24-26 — National Independent Automobile Dealers Assn., Wash-

ington, D. C. Dec. 3 — Utah Automobile Dealers Assn., Hotel Utah, Salt Lake City.

Jan. 11-15, 1958-National Automobile Dealers Assn., Miami Beach.

Automobile Shows

Nov. 22-Dec. 1-St. Louis Auto Show, The Arena, St. Louis. No., 27-Dec. 1—St. Paul Automobile

Show, Auditorium, St. Paul.

Nov. 29-Dec. &-San Francisco Auto Show, Cow Palace, San Francisco. Dec. 14-21-Miami Automobile Show,

Dinner, Key Auditorium, Miami. Jan. 3-11, 1958—Upper Midwest Auto Show, Municipal Auditorium, Minneapolis.

Jan. 4-12-Chicago Auto Show, International Amphitheatre, Chicago. Jan. 4-12—National Automobile Show New York Coliseum.

Jan. 11-19—National Capital Area Auto Show, D. C. National Guard Armory, Washington. Jan. 17-24—San Antonio Auto Show

Bexar County Coliseum, San Antonio.

Jan. 17-25—Indianapolis Automobile Show, Manufacturers Bldg., State

Fair Grounds, Indianapolis. Jan. 18 - 25 — Pittsburgh Automobile Show, Hunt National Guard Armory, Pittsburgh, Pa. Jan. 18-26 — Cincinnati Auto Show

North and South Wings, Music Hall, Cincinnati.

Jan. 18-26-Detroit Auto Show, Artillery Armory, Detroit. Jan. 23-28—Tampa Auto Show, Fort

Hesterly Armory, Tampa.

Jan. 25-Feb. 2—Houston Automobile Snow, Houston.

Feb. 1-6-Louisville Automobile Show, State Fair Center, Louisville.

General

Sept. 23-26-Automotive Advertisers Council fall meeting, St. Clair Inn, Detroit.

Oct. 17-19—Automotive Wholesalers of Texas Convention and Booth Conference, Hilton Hotel, San Antonio.

Nov. 2-4 - Automotive Wholesalers Association of Louisiana convention and booth conference, Jung Hotel, New Orleans.

Nov. 30-Dec. 1-Florida Automotive Wholesalers Association annual convention, Orlando, Fla. Feb. 18-19, 1958—Motor & Equip-

ment Wholesalers Association con-

vention, Statler Hotel, Los Angeles. Feb. 18-19—National Standard Parts Association convention, Ambassador Hotel, Los Angeles.

"I can't understand why you failed in business.

"Too much advertising."

"What do you mean-too much advertising? You never spent a cent in your life on advertising.

"That's true, but my competitors did."





of TIME-SAVING, MONEY-MAKING BEAR

TOOLS and GAUGES



Make this Bear Display Board your Idea Center! Examine and get the "feel" of the latest wheel service tools. You'll discover that a regular look at this display will give you a lot of new and valuable ideas about cutting corners and increasing your profits on such wheel alinement and balancing operations as toe-checking, camber correction, hub and wheel weight removal, etc. Next time you're at your Bear Jobber's, don't miss seeing this Bear Display

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Sensational! New! 360° REVOLVING LIGHT # FREEZE-PROOF WATER-PROOF FADE-PROOF TROUBLE-PROOF EASY TO INSTALL * MADE LIKE A FINE WATCH * BUILT FOR YEARS OF SERVICE For wreckers, ambulances, emergency vehicles of all types

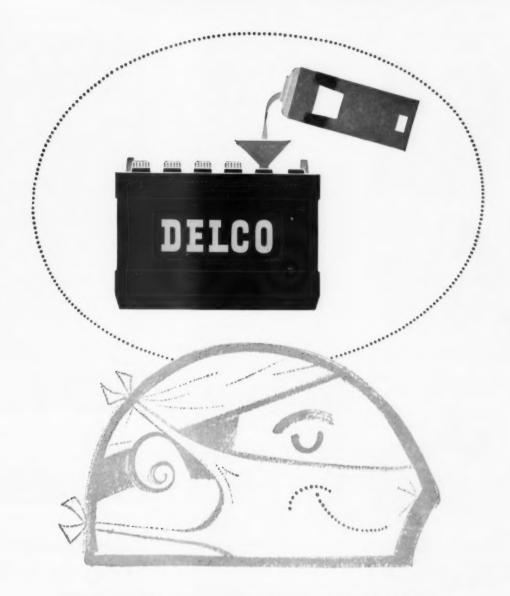
here is the most eye-catching and effective light you can buy. The price is VERY LOW!

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BRAIN SURGEONS

want Delco Batteries!

Three separate surveys made by leading magazines prove more people want Delco batteries than any other kind. It figures, too! Delco dry charge batteries can't get old before they're sold. Delco is America's No. 1 Battery - backed by General Motors warranties that are good all over the United States and Canada, too. They not only sell themselves to brain surgeons, but to all of your customers.

distributed nationally by



General Motors leads the way-Starting with Delco Batteries

137











For the toughest cleaning jobs, Bendix* Metalclene is tops. You dip dirty metal parts in Metalclene—and they come out clean. No brushing, no scraping, no heating. There are many imitations—there is no substitute.





BENDIX PRODUCTS DIVISION, BENDIX AVIATION CORP., SOUTH BEND, IND.

Body Shop Tips...

Continued from page 62

duct, then roll forward portion of the coupling back onto rear position. Insert the front air duct into the fender and install the two upper attaching screws in the flange. Unroll forward half of the rubber coupling onto front air duct. Position the special tool as far forward as possible on the inside of the air duct inner shell, then expand the duct to original size and install duct lower attaching screws. Rework fender flange where saw cuts were made. Install drain tube and headlight assembly. Aim headlights.

How to Carry Heavy Panes of Glass

Cut a section of garden hose 8-10 inches long and slit the hose full length. Then slip the slit edge over the lower edge of the glass to be carried. This forms a handle. The longer sections may be utilized the same way to store panes of glass standing on edge. They form a base so that the glass can't slip. Bill McMichael, 131 W.E. St., Springfield, Ore.

Removing Side Raising Hoods on 1950 Buicks

It is easy for one man to remove and replace the side raising hoods on 1950 Buicks, First I unlatch the hood on one side and put a fender cover on the fender. I then let it lay back over the hinges. Then I take a board about 12 inches wide and about 31/2 feet long and lay the board on the fender lengthwise so that the hood hinges are in about the center of the board. I let the one side of the hood down on the board, then go around to the other side and do the same thing. With both sides of the hood resting on the



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and Design, Largest Exclusive Mfgrs, of
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Champ-Items No. 112 Coil Sgring Rubber Booster for all cars, with the "two-way stretch" for minimum or maximum lift, is the answer to a new car ride. Made of high grade moulded rubber. List \$3.00 per set of 4 boosters.

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boards, it is easy to slide the hood forward and let it down on the floor on a blanket. To put the hood back on, stand it on the pointed end, letting it rest against the bumper and slide it gently back on the boards until you get it into place. Then remove the boards. George E. Reed, Reed's Repair Shop, 1411 So. 16th St. Omaha, Neb.







New Series "1250" Hypressure Jenny

Kenny-Ross Chevrolet Service Department makes over \$3,500 EXTRA PROFIT a year From Hypressure JENNY Steam Cleaning



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KENNY-ROSS CHEVROLET, Pittsburgh, Pa., maintains one of the largest volume auto service departments in Pennsylvania. Hypressure JENNY steam cleaning is an important part of their service to customers as well as a labor and money saver on repair and service jobs.

Practically every car or truck that comes in for engine overhaul is Hypressure JENNY steam cleaned as part of their thorough service, and to reduce the time and labor cost of

the job. Mr. Steigerwald, Service Manager, estimates that his department realizes over \$3,500 extra profit a year from their steam cleaning operations.

JENNY steam cleaning can save man-hours and make money for you, too. For full particulars without obligation, MAIL THE COUPON TODAY!

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KNOW TO KEEP DROP CORD
REPLACEMENT COSTS DOWN!





GET MORE JOBS DONE FASTER with

Cordomatic DROP LIGHT REELS



Garages and service stations all over the country have increased garage operating efficiency since installing Cordomatic Drop Light Reels! Low in cost, it mounts easily on wall or ceiling ... cord automatically reels in and out. Saves mechanics valuable time! Outlasts dozens of ordinary drop cords.

Crack-proof phenolic handle with Levolier toggle-switch, side convenience outlet . . . swing-open lamp guard . . . oil and water resistant Neoprene cord.

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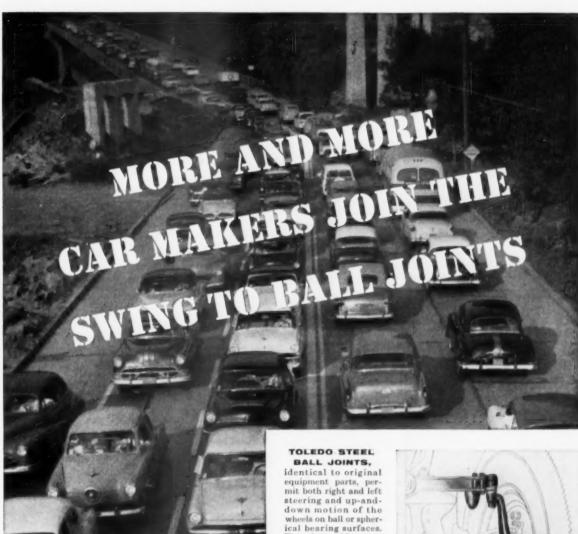
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identical to original equipment parts, permit both right and left steering and up-and-down motion of the wheels on ball or spherical bearing surfaces. Thisadvanced front suspension principle not only makes steering safer and easier, but also allows valuable extra space for larger engines and for more functional chassis design. The replacement market for this new product is expanding rapidly.



Replacement market for ball joints is expanding rapidly

Ball joint suspension first appeared on new cars in 1954. Ten new car models featured this suspension in 1957, and the number is expected to increase in 1958. And for good reason! Ball joints help cars hug the road, make steering easier and safer, aid advanced styling.

Today the replacement market for this revolutionary new product is growing by leaps and bounds. Toledo Steel, a leading chassis parts supplier for more than 50 years, offers you a complete line of identical ball joints for the replacement market. Be sure your stock is adequate now!



TOLEDO STEEL PRODUCTS

Division of Thompson Products, Inc.

6402 CEDAR AVE. - GLEVELAND 3, OHIO

How to get the most from your air compressor

Extra care can pay off big when you buy an air compressor — and when you use it. Here's how DeVilbiss compressors — and proper maintenance — help you get more air for your money.



1. Simple test with your wrist watch quickly and accurately tells if your compressor is costing you more than it should due to inefficient operation.

Ask your DeVilbiss jobber for Catalog C-50, containing test details.



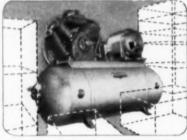
2. Use large enough compressor to provide the amount of air and pressure necessary to handle your full volume of work. An undersized compressor is false economy — runs more than it should, overheats, wears faster.



3. Drain the air receiver or storage tank daily to remove accumulated water. Excessive amounts of water in the tank reduce its capacity for storing the compressed air. Result: compressor starts and stops more often.



4. Air strainer on the compressedair intake should also be kept clean. And the oil in the compressor crankcase should be changed on a regular schedule, as called for in the manufacturer's instructions.



5. Give room to your compressor.

Don't pile cartons or merchandise where they will restrict the flow of air. Free circulation of air is essential—both to proper cooling and adequate intake of the pump.



6. Tests show DeVilbiss compressors deliver up to 22.6% more air per power dollar than most others. Low-friction design makes the difference; returns your investment through power savings, reduced maintenance!



7. DeVilbiss offers its customers the economy of its Exchange Service. Compressors needing major repair are immediately replaced with units rebuilt to factory standards. Each carries the same guarantee as new equipment.



8. For full data on DeVilbiss compressors—upright or V-type, single- or two-stage, horizontal or vertical models, ¼ to 15 hp—send for Catalog C-50, or see Yellow Pages of your phone book for your DeVilbiss supplier.

THE DEVILBISS COMPANY

Toledo 1, Ohio

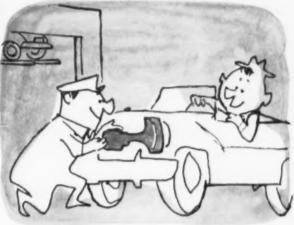
Barrie, Ontario • London, England
Branch Offices in Principal Cities



How G-E ads are <u>aimed</u> to make more money for you!

G-E consumer ads will make a double-edged profit for you. Saturday Evening Post, Look, Popular Mechanics and Popular Science will carry these ads which will build your aiming business and help you sell more pairs of new G-E All-Woolke Headlamps.





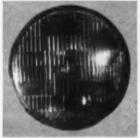
"Your dealer can quickly determine if your headlamps are mis-aimed—and he can aim them accurately in minutes—even in daytime."

Double Profit!

When you see headlamps like these ... sell a *pair* of new headlamps ... and an aiming job.
You profit on both!



WATER DROPLETS inside the lens not only scatter the light, but they also help discolor metal reflectors. This can't happen with G-E Ar Eval Headlamps — moisture can't possibly get inside.



DISCOLORED REFLECTORS absorblight rather than reflect it, causing a loss of up to 50% of the original light output. Dirt and moisture can never enter G-E am aliam. Headlamps so the reflectors always stay ships.



SLACKINED SULBS in old-style headlamps block out the light from the filament and cause a dangerous drop in light output. This can't happen with G-E Artica. Headlamps because there are no inner baths.

So...for More Sales

1. Aim headlamps

San Single Property and the last

- 2. Sell G-E All-Weather Headlamps in pairs!
- 3. Check rear lights, too

CHECK YOUR STOCKS...AND ORDER SMALL BULBS IN NEW G-E SPACE-SAVER PACKS!

They take 30% less space. There are no flaps, no covers; stocks stay neater; service is easier. General Electric Co., Miniature Lamp Dept. MA-97, Nela Park, Cleveland 12, O.





"You really did us a favor when you introduced the complete high quality, low-priced battery line. It not only broadened our market, but it's given our dealers a price leader with real quality behind it. A dealer who has the new line, plus the Auto-Lite mid-range batteries, plus the great premium line—Sta-ful—has about everything he needs for a really profitable battery business."

Many Deanhous

HENRY DESENBERG, Sales Manager BEARD & STONE ELECTRIC CO., INC. 805 POLK AVE., HOUSTON 2, TEXAS



AUTO-LITE. BATTERIES

"AUTO-LITE ACCEPTANCE IS YOUR PROFIT GUARANTEE"



Survey

It has been said that no publication ever released the results of a survey it did not win. This may be true or not. What really matters is that, time and again, surveys do reveal two things: they prove the vital necessity for using business papers to reach the key figures of an industry—they prove that worth-while business papers are read regularly and attentively from cover to cover.

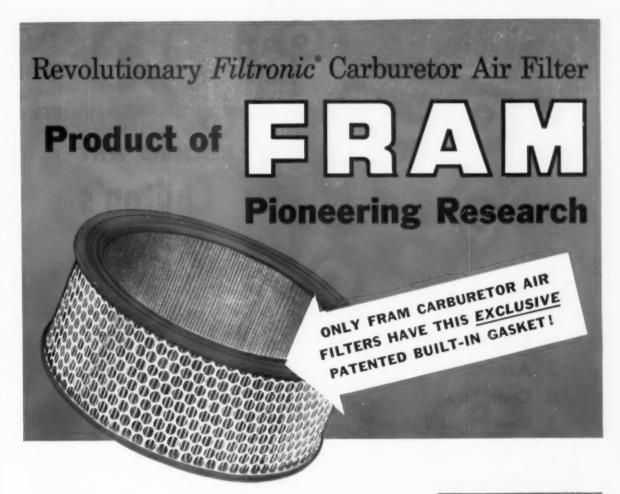


Chilton

Chestnut and 56th Streets . Philadelphia 39, Pennsylvania



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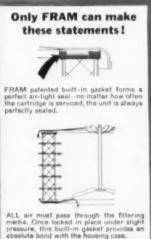
Nearly 50% of 1957 cars are equipped with a new FRAM Filtronic type Carburetor Air Filter that obsoletes all other filter types! That means a tremendous new filter cartridge market for youthe result of FRAM research. And when you replace with FRAM you offer your customers the finest cartridge obtainable. Here's why:

Only Fram features the patented built-in gasket shown above. This FRAM patented design absolutely prevents by-passing of dirty air: eliminates all of the defects found in other types of sealing—such as metal to metal, metal to cork or compound gaskets and metal

beads pressed against a flat plastisol face. Unless these types of cartridges are replaced after servicing, in exactly the same position, they leak dust and dirt.

FRAM engineers designed the exclusive Fram patented built-ingasket as an integral part of the end seal. It can never leak dirt-laden air-no matter how often it is serviced! Add these other FRAM advantages: 99.+% efficiency, easy cartridge replacement and you'll know why the FRAM Filtronic Carburetor Air Filter Cartridge is the finest on the market today. No other filter has all these advantages!

Fram Corp., Providence 16, R. I. • Fram Canada Ltd., Stratford Ont.



New FRAM FILTRONIC Carburetor Air Filter Is now original equipment on twenty-four 1957 engines!

Complete line of replacements for other cars equipped with a Filtronic Type Carburetor Air Filter



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WRECK

IS THE SERVICE

- 1 Loose Leaf
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- 4 Complete
- 5 Parts and Labor Together
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- 7 Insurance Company Acceptance
- **8 Famous CHILTON Exploded Drawings**
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- 11 7-Ring Sturdy Binder
- 12 Convenient Labor Conversion Chart
- 13 Usable Accurate Towing Chart
- 14 All Makes of Cars Covered



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AROLUSE REELS go overhead to help you solve the space problem . . . speed service. Very smart appearance!



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whether you do 50 or 500 lube jobs a month . . . you'll find AROLUBE equipment unbeatable for your needs! ARO lubricators are powered with the amazing AL-207 Pump . . . uses less air to pump more lubricant.

SEE YOUR AUTOMOTIVE WHOLESALER NOW FOR DETAILS.

WARRANTED FOR 3 YEARS OR 10,000 LUBE JOBS!

ARO warrants the AL-207 Air Motor to be free from defects in workmanship and materials for 10,000 lube jobs or 3 years, whichever occurs first, from date of purchase.

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Easy to Apply • Nongumming Nonfreezing • Nonmelting



Weather-Stripping lubricated and protected—squeaking and sticking stopped; undercarriage rubber mountings and fan belts preserved.



Radio Antennae sealed and lubricated—for better reception, easier raising and lowering; ideal for window channels.



Battery Terminals and cases kept clean, corrosion minimized, electrical losses prevented, life of battery prolonged.



Ignition Systems, magnetos, distributors, spark plugs kept dry, leakage eliminated, wiring preserved.

Specified by leading automobile manufacturers.

Order 4X from your jobber today in 12 oz. spray cans; or as compound in 8 or 2 oz. tubes.

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CANABA! DOW CORNING SILICONES LTD., TORONTO

The PIONEER Tool FOR INSTALLING VALVE SEAT RINGS



THE FIRST... and still the MOST POPULAR, MOST PRACTICAL, SIMPLEST, MOST UNIVERSAL tool of its kind made. EVERLASTING... the first tools made over 25 years ago are still in service.

K. O. LEE COMPANY

ABERDEEN, SOUTH DAKOTA





Two employers were discussing the dumbness of one of their employees.
"I've got the dumbest," and the first,
"watch this." Calling Elmer, he said,
"Here, take this \$5 bill and go buy me a Cadillac." Elmer took the money

a Cauttac." Etmer took the money and departed without a word. "That's nothing!" said the second boss. Calling his accused dumb one, he said, "Luther, go over to the club and see if I'm there." Luther also left

the room without a word.

Outside he met Elmer. "Boy, ain't we got some dumb bosses?" "Yeah," said Elmer, "mine gave \$5 to buy a Cadillac but the jerk didn't tell me what color he wanted."

He's right bright compared to my boss," said Luther. "He asked me to go over to the club and see if he was there—when he could have picked up the phone and found out for himself.

A visitor stopped in a club room to pass the time of day and noticed three men and a dog playing draw poker.

"Sure must be a smart dog," commented the stranger.

"Naw, he ain't very smart," piped up one of the trio. "Every time he gets a good hand he wags his tail."





"That guy REALLY needs a brake job!"

A guest at a hotel which was located adjacent to a coal mine put through a hurried call to the desk clerk.

"A group of men, carrying picks and wearing head lamps, just marched through my room," the irritated guest complained. "What explanation do

you have to offer for this?"
"Don't let a little thing like that
excite you, sir," the desk clerk
soothed. "After all, it was just a miner detail."

A thirsty man entered a bar and said to the bartender, "Make me a very dry Martini, please—twenty parts gin to one part vermouth."

The bartender obliged and as he

was about to serve the cocktail to the customer, he asked, "Do you wish me to squeeze a little lemon peel in it, Sir?

The Martini addict was outraged.
"Say," he barked, "if I wanted
lemonade, I'd ask for it."

Have you heard about the Texan who bought the MG? He used it to drive to his Cadillac.

"And then," said the former service man, "my wife hit me with an oak leaf."

The judge suggested that couldn't have hurt very much.

"Well, you see," explained the witness, "the leaf was from the center of our dining room table."

"Is she Hungary?" Jimmy asked Bill.

"Alaska," Bill said.

"Yes, Siam," she said.
"All right, I'll Fiji," Bill promised. "Oh, don't Russia self," Jimmy sug-

gested. "Yeah, but what if she Wales?"

"Give her some Chili," Jimmy suggested.

"I'd rather have Turkey," she replied.

When the waiter brought the check Jim said: "Look and see how much Egypt you."

A man can't make a place for himself in the sun if he keeps taking refuge under the family tree.





Whatever is Finest for the Engine you get in Ramco 10-Up Sets

Ramco Engineering provides the exact combination of rings best suited for the specific engine. That means...

When the engine needs:

Tapered Face Compression Rings you get them in Ramco 10-Up sets

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Chrome Rail Compression Rings you get them in Ramco 10-Up sets

Chrome Spiro-Seal Oil Rings you get them in Ramco 10-Up sets

Chrome C-9 Oil Rings you get them in Ramco 10-Up sets Whatever it takes to re-power an engine to Ramco's standards for finest Get Up and GO, you get in Ramco engineered 10-Up sets. For example, for many of the newer engines where sealing against vacuums on deceleration or city speeds is the problem, Ramco engineered 10-Up sets include the Ramco Chrome C-9 Oil Ring with its circumferential expansion and advanced side sealing action; the Ramco Chrome Rail compression ring with its double sealing action in the sec-

ond groove; and the Ramco Top Chrome compression ring with its quick seating, tapered face for maximum protection against wear in the top groove.

In this Ramco 3 ring combination you have the latest example of Ramco engineering's prescription balancing of ring actions to meet a specific problem of engine re-powering. For an interesting brochure about Ramco engineered 10-Up sets, see your Ramco Jobber or write Ramsey Corporation, St. Louis 8, Mo.



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